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THE

AMERICAN

BEE JOURNAL.

AGRICULTURAL COLLEGE.

EDITED BY SAMUEL WAGNER.

"——— To Us, both field and grove,
Garden and orchard, lawn and flowery mead,
The blue-vein'd violet, rich columbine,
The wanton cowslip, daisies in their prime,
With all the choicest blossoms of the lea,
Are free allowed and given."—PARLIAMENT OF BEES, JOHN DAY, 1607.

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[For the American Bee Journal.]

The Effect of Water on the Combs and the Life of the Bees.

Superficial observers of nature and her operations are very apt to form erroneous conclusions, mistaking effects for causes, and constructing hypotheses which, when compared with the facts on which they purport to be based, do not even represent the shadow of the substance in question. Similar consequences flow from the misconceptions of those who, in utter unacquaintance with the wonderful operations of natural forces, as well as with the results of those processes, venture to speculate on phenomena which casually come under their observation. We do not propose to censure the failure of the latter; they have simply not been taught to observe. But the former, while impelled by a desire for knowledge, reflecting on the subjects which they design to elucidate, deduce incorrect and ofttimes ridiculous inferences from their premises, simply because they happen to be ignorant of the requisite auxiliary branches of science.

Such and similar remarks are we frequently constrained to make in the various departments in which technical operations impinge on natural processes, or rather where they seem to be sustained by ascertained particular facts in natural science. An attentive perusal of the various periodicals devoted to specialities frequently presents this truth, and renders it manifest that if practical interests are to be successfully advanced, the processes employed must be brought into operative harmony with the principles which science has demonstrated to be true and applicable.

We read lately at a friend's house, the excellent AMERICAN BEE JOURNAL, published in Washington, and found therein many very valuable articles; but among them likewise some which, whether for the first or the second of the reasons indicated above, present views not precisely in accordance with, or not held in due subordination to, the scientific principles of force in the premises. From this consideration, and because a translation of our articles on foulbrood, communicated to the Hanover Centralbatt, appeared in the JOURNAL in the autumn of 1868, we resolved, if its columns were open to our discussions in the field of apistics, to endeavor to aid in bringing the views of bee-keepers on apistical questions in accord with the principles of modern science, in a country which has long been the chosen home of two of our children—availing ourselves also of the opportunity to elucidate more fully, or render more easily intelligible, the articles on foulbrood to which we have just referred.

In support of the position assumed at the outset, it will only be necessary for us to advert to what has appeared in some of the principal apicultural and other journals of Germany. Thus, a certain Dr. Landois had heard that worker bees possess the power to raise queens from worker eggs. Basing himself on this conceded fact, he unblushingly declared in the Journal for Scientific Zoology, that it is in power of the beekeeper, by regulating the quantity of food administered by him, to raise queens, workers, or drones at pleasure. And later, sanitary-counsellor Dr. Preuss maintained in the Bienenzeitung, that foulbrood is the product of a fungus, by him named "*cryptococcus alvearis;*" though Liebig and other eminent chemists and naturalists had previously shown that fungi and infusoria are the products of incipient putrefaction. Indeed Dr. Preuss mixes up the putrefactive and the fermentive processes strangely, in his article; citing them now as appearing in due order, and again as occurring wholly out of place. He contends in general that fermentation is a consequence of the formation of vegetable tissues; though it has long since been demonstrated by Liebig, Döpping, Struve, and Karsten, that sugar, for example, may, by decomposition, be resolved into alcohol and carbonic acid, without exhibiting in the process the slightest indication of the presence of fermentive fungi. The most eminent chemists and physiologists have shown conclusively that the putrifying substance is the generator of fermentation, and when brought into contact with fermentable matter in certain states of temperature, in the presence of moisture, will superinduce the fermentive process. Dr. Preuss, on the other hand, contends that the fungus, which he claims to have discovered in the putrid larvæ, was the cause of putrefaction in them. Others, again, having seen that, at certain seasons, bees carry water into their hives, and relying on the representations of previous observers, speak, especially in the Bienenzeitung for 1868, of "water dearth" among bees—just as though they were speaking of a human being, languishing with parched tongue for a drop of water to quench his thirst. Bees know not thirst. They carry in water simply to dissolve crystalized honey, to enable them properly to concoct the aliment required by the brood. This portion of their labor might more appropriately be designated as providing the means of solution. There are others, also, who speak of "dysentery" among bees, as though it were something that might be regarded as a diseased condition of their organism, such as occurs at times in the intestinal canal of human subjects; and they have even advised recourse to, and have themselves employed, the remedies deemed efficacious in the latter case. These, however, leave out of view altogether the fact that bees must, within a certain limited period of time, be able to discharge their fæces; and if the proper opportunity to do this is not presented, the alvine viscera become gorged. Bees are then constrained to make their evacuations when and where they can, oft of necessity polluting their combs and the interior of their hives. This condition is, no doubt a fearful one to the suffering insects; but is not in reality a disease. As soon as the weather permits the bees to fly, the whole difficulty is removed.

We might greatly enlarge this catalogue of transgressions against science, if disposed to pursue the registration. But we should probably be thereby tempted to engage in discussions, which might not indeed be of disservice to the cause, though they should lead us too far away from our present purpose. From these and similar incongruous notions and doctrines, we shall therefore only select that which from its nature seems to bear a close relationship to what has been called "water dearth." We take occasion accordingly to speak somewhat in detail, of *the effect of water on the combs and the life of the bees.*

What is called water dearth among bees is a subject which, as we have already stated, has been repeatedly and exhaustively discussed—the singular notion of its occasional existence having sprung from the fact that, in the spring, bees are frequently seen sipping water at pools and ditches, and conveying it into their hives. Misled by this fact and the queer fancies which it seems to have engendered, bee-keepers have been induced to institute various, experiments, which, if viewed in the light of their possible consequences, might well be regarded as designed to work the utter destruction and ruin of bee-culture. No doubt this is a strong expression; but it is nevertheless true. We have often read in various bee journals, that practical bee-keepers, when they saw that their bees were getting restless in the spring, conceiving they were suffering from the supposititious water dearth, poured water in the combs, and remarked triumphantly that after such operation the bees became quiet. The poor dear creatures! Think of a man confined in a circumscribed space and gasping for fresh air;* and now, instead of being blessed with what he sighs for, a bucketful of cold water is dashed, not indeed in his face, but in his narrow house, and judge how the poor disappointed sufferer would feel!

If it be asked, do not the bees need water? we must say in reply, they do. Honey, for instance, if it remain long undisturbed in the cells, becomes partially candied, the grape sugar it contains alone remaining liquid. The crystals being of so compact and solid a nature, the bees are unable to consume them in that form, or prepare from them the jelly with which, in an *undigested* state, the larvæ of the workers and drones are supplied in their last stage prior to transformation, it is quite natural that they should be dissolved and made available, by means of water brought in from abroad. Hence it happens in the spring, so soon as bees have brood to nurse, and the honey from which the jelly is to be prepared is partially crystalized, water is in demand and some of the workers are seen carrying it in. It is wise, therefore, at this season, to supply them in convenient places with pure rain or river water in a shallow pan or dish, placing in it a piece of sponge, or moss, or some chips, to save the bees from drowning. Well water, if used for this purpose, should be previously boiled and allowed to settle, to free it of mineral salts that might prove injurious.

Bees never carry more water in their hives than suffices for their immediate wants. No bee-keeper ever found that they store up any in the cells for future use. The reason of this is obvious. Permanent dampness or moisture in a hive is invariably followed by the destruction of the colony. Hence the instinctive antipathy to it so unmistakably manifested by the bees everywhere in the various functions of their life. This assertion may seem to require some further elucidation. There are *two points* which, on close inspection of the combs of a hive and the substances therein deposited, supply us with the tangible evidence why bees are so solicitous to exclude water and all dampness from their dwellings; and observant bee-keepers will not have failed to see how sedulously they endeavor to rid their hives of all superfluous moisture therein condensed or collected, so soon as the temperature of the atmosphere will permit them to do so. Every drop of water is then removed, as quickly as it makes its appearance.

As warm-blooded creatures receive with their nutriment two substances producing very different effects on their organism, so likewise the bees. They receive with the honey, a non-nitrogenous substance ($C\ 12\ H\ 12\ O\ 12xH\ O$), the combustible material, which combining with the oxygen inhaled through their stigmata, forms carbonic acid and hydrogen. Where this chemical combination of elements takes place, caloric is liberated. As this combination proceeds in the body of the bee, the inhaled oxygen uniting with the nitrogen and carbon of the nutriment consumed forming aqueous vapour and carbonic acid, it is obvious that the bee developes and possesses animal heat equivalent to a temperature 52° or 55° F., whereby the activity of its organs is maintained and their vital functions supported.

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*That bees require a constant supply of pure fresh air in their hives, for purposes of respiration and digestion, will readily be conceded in view of the large amount of vapor, carbonic and formic acid generated therein—the natural product of respiration and digestion. With the editor's permission we may hereafter treat of this topic more fully in these columns.

With pollen, on the other hand, they receive a plastic nutriment, supplying nitrogen and sulphur (phosphorus), of which we may remark, in passing, their bodies are composed. It supplies the ferment by the agency of which wax is elaborated from honey. It is the medium by which the wasted powers of the bee are recuperated, and by which the nervous and muscular system is supplied with the perduring vigor and toughness, which we so admire in our winged favorites. Mature bees consume but little of this substance—only as much as suffices for the purposes here indicated; whereas to the brood is administered so much, in the jelly allotted to it, as is required for the constitution of the bee's body and the construction of the cocoon in which it is destined to undergo its final transformation.

Everybody is familiar with those properties of nitrogenous and sulphurous substances which render them peculiarly susceptible of putrefaction when exposed to the action of the oxygen of the atmosphere, to moisture and a certain degree of heat. That such is the case also with the nitrogenous pollen stored in the cells by the bees, scarcely needs to be remarked, after what has already been said; yet, to obtain satisfactory evidence of the fact, let us institute the following experiment:

Take out of a comb about one-quarter of an ounce of pollen, and triturate it between the fingers; then put it in a phial and pour on it as much water as will cover it about half an inch. Set the open phial ten days or two weeks in a place the temperature of which ranges from 62° to 65° F. Should much of the water evaporate, replace it gradually. If the contents be carefully observed during the time mentioned, it will be seen that when decomposition has commenced, minute air bubbles will be formed and rise to the surface; and the whole mass will ultimately become agitated. That larvæ fed with putrescent pollen must perish, will be evident when we consider how very destructive every other putrescent substance proves to be when brought in contact with organic substances in the conditions already stated. Putrid meat, putrid medullary matter, or putrescent blood placed on a wound, produces vomiting, debility, and finally death. (See *Magendie's* experiments).

The reader will now readily understand why bees, instinctively conscious of the dangerous influence which water, or even mere dampness, is capable of exerting on their nitrogenous nutriment, are so exceedingly solicitous to keep the interior of their hives as dry as possible. Yet a large proportion of beekeepers, besides furnishing their bees with hives saturated with or not readily absorbing moisture, do all they can to keep the combs damp likewise. We seem to hear some of those thus impugned, angrily exclaim:—"Nonsense! We give our bees a suitable well-constructed wooden hive, and it is folly to talk of damp combs in them! The writer is overdoing matters!" In place of all replication we pray these worthy friends to examine the interior of their wooden hives in October or November; and again in February, March, or April, to satisfy themselves how plentifully vapor has been condensed in them, how moisture pervades the whole, and specially how dampness has affected the combs.

In such circumstances, indeed, it is quite natural that the inner walls should be covered with condensed moisture and drops of water, resulting from external cold, whenever the bees are no longer able to remove it as fast as it is formed. And then, as the quantity condensed increases, it will form on the combs also, and trickle down from cell to cell, and entering these will speedily dampen the pollen they contain; which, in turn, operated on by the increasing warmth of spring, begins to undergo putrefactive decomposition, ultimately proving destructive to the larvæ fed with jelly prepared from it. No kind of timber, generally available for hives, is porous enough to absorb all the moisture at times generated by the bees therein domiciled; and there seems to be no alternative but to seek some other material better adapted to the purpose desired.

In another point of view, also the moisture condensed in wooden hives, will sooner or later inevitably result in the ruin of the colony exposed to it.

Every larva—whether worker, drone, or queen—before undergoing its final transformation, envelopes itself more or less perfectly in a cocoon spun by itself; and we may properly inquire of what substance the filaments of that tissue are composed. As already intimated, it is derived from the pollen consumed by the larva. To demonstrate this fact, is our next task. The experienced beekeeper doubtless knows that, when pressing out wax, a dark mass is left in the sack. This is composed of the cocoons or nymphal envelopes remaining in the cells after the brood has emerged. Let him take an ounce of this, place it in a retort with a small quantity of water in the condenser. Now heat the retort, taking care to exclude atmospheric air. The tissues will be burned, leaving in the retort a portion of carbon and the mineral substances combined therewith. The other substances, assuming a gaseous form, passed over into the condenser, and either occupy the space over the water, or have been absorbed by the latter. Among these is the nitrogen. This, when liberated from the tissues, immediately combined with the hydrogen, which was liberated at the same time, forming ammonia. This latter substance, with which alone we are here concerned, is absorbed by the water in the condenser, and its presence there may be shown in the following manner: Heat, in a capsule, a small portion of the water taken from the condenser; add thereto a little caustic lime; and the ammonia evolved will be detected by the pungent odor diffused. Since honey ($H_{12}\,C_{12}\,O_{12}-2\,H\,O$) contains no nitrogen, it is manifest that the substances forming the tissue of the cocoon enveloping the embryo, must have been derived from the nitrogenous pollen consumed by the larvæ.

It is thus demonstrable that the cocoon tissues remaining in the brood cells contain nitrogen and sulphur; that these absorb water like a sponge; and when this happens they become coated with mould and finally undergo decomposition. The honey gathered and stored in the cells, begins to ferment, and in this state furnishes the most fitting material for generating foulbrood.

Now conceive of *any form* whatever *of wooden hive*, tenanted by bees, in which they consume their food, and in which consequently a proportionably great quantum of aqueous vapor is generated and condensed against the sides, just as we see it in spring and fall on the window glass of our dwellings, and it may well be contended that the moisture, (which must eventually be generated in any *wooden hive*,) with its resulting evils, is more and more certainly detrimental to bees than any other malign influence to which they are liable to be exposed.

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Having thus, as we conceive, shown conclusively the effect which water has on the combs and the life of the bees, we have only to add that this dangerous malady—foulbrood—finds its source naturally in the circumstances to which we have traced it. If namely, pollen becomes putrefied by the conjoint operation of the oxygen of the atmosphere, water and heat, then the cause of foulbrood is obviously discovered. Precisely because wooden hives are now more commonly used than formerly, and the condensation of moisture is thus of more frequent occurrence and more abundant, complaints of the prevalence and diffusion of this malady, are far more numerous than they formerly were, when straw hives were in almost general use.

That the cause of foulbrood must properly be sought for in pollen made putrescent by moisture, will be clearly established by the following experiment: Take a fourth of an ounce of pollen, and triturate it between the fingers; place it in an open phial and keep it constantly moist with lukewarm water, exposing it for eight or ten days to a temperature of 62° to 65° F. The mass will then, if the moistening has not been neglected, have fully undergone decomposition. Having satisfied yourself of this, take half a pound of honey warmed to liquidity, pour the decomposed pollen in it, and mix the whole thoroughly by shaking or stirring. Let it now stand eight or ten days longer, in a temperature of from 65° to 70° F., and then feed a healthy colony with this fermenting substance —taking care to do the feeding in a close chamber, to prevent other bees from participating. *The brood in this colony will, within a week, be dead and putrid.*

The attentive reader will thus understand that the pollen decomposed by the action of moisture and heat, caused the honey to undergo a chemical change. In other words, the putrescent pollen was the leaven by which the fermentable honey with which it came in contact was brought into a state of fermentation; and being then fed, *undigested*, by the nursing bees to the larvæ of workers and drones, just previous to their last transformation, carried the fermenting process over into their delicate organism—causing putrefaction and death. The contagious matter of this disastrous malady, as is well known, speedily becomes diffused far and wide, carrying with it the destruction of bee-culture in all its range. It is hence specially important that we acquaint ourselves with its nature and mode of diffusion, that we may be the better able to preserve our colonies from it or cure them when attacked.

In organic bodies we clearly distinguish two different classes of substances. One of these, under the influence of the oxygen of the atmosphere, in certain conditions of temperature and moisture, is susceptible of decomposition. Prominent among these are all bodies rich in nitrogen and sulphur (phosphorus). The others do not undergo decomposition so long as they are kept pure and unmixed. To these belong non-nitrogenous substances (starch, sugar, fats, &c.) To the first-class belongs the pollen gathered by bees; to the second class belong honey and the wax produced therefrom. When a nitrogenous substance undergoes decomposition, its constituent elements possess the peculiar property of *communicating the putrefactive process* to any non-nitrogenous substances with which they are brought in contact, and thus become the occasion of the separation of the elements of which organic substances are composed and enable them to enter into other combinations. This phenomenon may be distinctly observed by placing some sound organic substance in close contact with a rotten apple or other decaying fruit. In a short time it will be acted on by the atoms of the putrescent body; and the infection will in consequence speedily spread more and more, in concentric-circles, until it whelms the whole in one common abysm of decomposition and destruction. If now such putrescent substance be suddenly dried, decomposition is at once arrested and ceases; but immediately recommences and proceeds, when again permeated by moisture and heat.

Having, in the foregoing, given a somewhat minute account of the nature of the putrefactive process, it will readily be understood that so soon as the larva, prior to its final metamorphosis, partakes of the *undigested* jelly, composed of putrescent pollen and honey, the fermentive process will be communicated to its body, which, infected thereby, at once passes into a state of decomposition. So long as the colony continues populous, the extraordinary internal heat of the hive dries up successively the putrid larval remains; but minute motes, such as we may see floating in the sunbeams in a darkened chamber, become detached and float about in the atmosphere of the hive as well as in that of the apiary, and are spread abroad by every current of air. They are thus carried to and enter other hives, and may finally reach even distant apiaries. They find a lodgment in the pollen, the honey, and the cells of the hives they enter, infecting the contents, and communicating the process of decomposition. The nursing bees in such infected colonies feed the brood with contaminated jelly, and foulbrood soon manifests its presence.

We find phenomena precisely similar elsewhere in the economy of nature—two of which may serve to illustrate the view we have presented.

In human dwellings near which marshes or ponds exist that become dried up by the heat of summer, epidemic diseases, fevers, &c., occur. These are usually thus accounted for. Those marshes are the arena where myriads of infitessimally minute animalculæ abound. The evaporation of the water and drying up of the marshes, deprive these creatures of their vital element. They perish; the oxygen of the air acts on their remains, dissolving their organic combination; and then their liberated constituent elements enter into new combinations—the sulphur, for example, uniting with the hydrogen, forms sulphuretted hydrogen. The extreme heat of summer soon dries up these putrescent organic substances; myriads of minute atoms quickly become detached therefrom and are carried by the air into all the region around. They are thus inhaled by the inhabitants, adhere to the internal tissues of the body, and there finding the requisite conditions of heat and moisture, become putrescent again, and communicate the putrefactive process to the organs they infest. Disease is the result—the person afflicted grows sick.

Morbid matter from a corpse, conveyed into an open wound, decomposes the blood, and finally causes death.

Having thus shown that the atoms of dessicated larval remains, floating in the atmosphere, are able to superinduce the decomposition of pollen and honey in the cells of neighboring hives, and thus become the means of gradually diffusing the malady further and further, though the disease itself is originally caused by the moisture condensed in wooden hives, the importance of discontinuing the use of whatever contributes to or aids in the condensation of moisture, is at once obvious.

That foulbrood can be caused by feeding the bees of colonies containing brood, with contaminated or fermenting honey is likewise evident from the preceding statements; and under this conviction we content ourselves with remarking further that the minutest particle of putrescent nitrogenous matter mingled with the honey, suffices to render foulbroody the larvæ to which it is fed.

What has thus been advanced in these latter passages may be summarily presented in the following propositions: 1. Foulbrood may originate from putrescent pollen; 2, from contagion and infection; and, 3, from feeding fermenting honey. The honey brought to us from trans-atlantic countries, is mostly expressed from combs still containing both larvæ and pollen; these, exposed to heat during transportation, naturally become putrescent, causing the honey to ferment, and producing foulbrood in the larvæ to which it is fed.

August Lambrecht.

Bornum, near Wolfenbuttel. Jan. 1869.

[For the American Bee Journal.]

Mishap in Wintering Bees.

As I have extolled the wintering of bees in the ground, I feel it my duty to confess the check I encountered this winter.

The first fortnight of September was very profitable to the bees. Many of my strong stocks gathered twenty-five pounds of honey each, in three days. On the 16th of the month the frost killed all the flowers; and from that time, the weather being cold and rainy, the queens ceased laying. I had then several young queens, to replace the tested queens I had sold and the black impregnated queens I had removed from my hives and destroyed; but I could not induce many of these young queens to lay. Thus the time for putting the hives in winter quarters was at hand, before I could ascertain whether they were impregnated or not.

In these circumstances I reinforced twelve nuclei with bees and honey; designing to keep them through the winter, that I might have, in the spring, some fertile queens on hand, to replace drone-laying queens; for I felt pretty sure that I had many an unimpregnated queen in my hives.

My bees were buried in November, before the hard frosts set in. The month of January and the first half of February were unusually warm and wet. I was far from being easy as to my colonies, as I suspected that they were suffering from dampness. I had concluded to take them up before the end of February; but the last fortnight of that month and all of March were so cold that I could not dig them up before the 30th of March. I found all my *ruchees* in a piteous condition. One-fourth of them had perished, with plenty of honey in the hives; and all had more or less dead bees. The strongest stocks had survived; but amongst the weaker, in whose hives the honey was much scattered, the bees, after consuming the stores immediately within their reach, were prevented by mouldiness from passing to the other parts of the hive, and thus perished though there was plenty of honey close by.

But this is not all. On the very day that the hives were replaced on their summer stands, I had the mortification to see the bees of several desert them *en masse*, though the hives were in good order and stored with honey. Eight colonies played me that sad trick. The bees entered some of the other hives; but as for the queens, they were lost, although I had hived several of them, with as many workers as possible.

I suppose these queens were unimpregnated, and issued in quest of drones, and the workers, having no brood to care for, followed them. I think I may safely say that not one bee left my bee-yard—all entered some of the other hives. Thus, from want of brood in the hives, I was unable to ascertain whether fertilization could be effected in any case, after so long a delay as from autumn to spring. I am left poorer, by a full third in the number of *ruchees*, but enriched with plenty of mouldy combs.

Now, from what cause came this reverse? Did it come, as we are told by friend Gallup, from the great age of my bees? Certainly not. For, having bartered some Italian stocks for black bees, I replaced the queens in August, and the laying of the young queens was insignificant before winter. Fourteen (14) of these *ruchees* are alive; yet they had only old bees. I think the mishap must be attributed to some other cause. The honey gathered on the 13th, 14th, and 15th of September was not duly evaporated before the cold weather set in. Consequently, it remained uncapped, and the warm weather maintained it in a watery condition. The dampness and the relative heat of the trenches rendered the bees uneasy; they ate more than usual, and perished either by dysentery, or by the mould which invaded the combs.

Neither did the bees winter well in cellars this year, as the combs grew mouldy. It has been noticed that a cellar is always damp in summer, and dry in a cold winter. This explains the great mortality of bees, from dysentery, in cellars this mild winter.

Is there any way to prevent such dampness? Yes, there is an easy and cheap one. Procure some waste bittern from salt works. That substance has great power for absorbing moisture; and it costs nothing, as the salt manufacturers have no use for it. Dry it in an iron kettle, and put some of it in an earthen pan, in the bottom of which one or two small holes have been bored. Place another pan below the first to receive the drippings from the upper, when the bittern becomes liquified by the absorption of moisture. When all is dissolved, pour the liquid in the kettle again; evaporate to dryness, and then replace it in the pierced earthern pan. This may be repeated twenty-five or thirty times.

This process was invented by Prof. Bubreuil, of Paris, to keep fruit houses dry; and a patent was taken for it for that purpose. I have tried it myself while in France, and found it works well. It could be used for every stock by placing the pans under the cap of the hive. The pans for this use should be made to contain about a quart; and for a cellar, there might be several large enough to contain a gallon each.

If the salt and queensware works would advertise these products in the Bee Journal, I am quite confident they would have a good demand for these articles, as soon as their use would become widely known.

Ch. Dadant,

Hamilton, Ill.

Millipedes, or wood lice, are a most destructive enemy to bees. They sometimes proceed from the stands being made of old decayed wood, in which the wood lice lay their eggs, and thus breed under the very hive. Entering the hive, they breed in the combs.

The color of the honey depends on the color of the juices which the bees collect it.

[For the American Bee Journal]

The Italian Bee.

Mr. W. Hewson, of Kent, England, wishes Gallup to try his hand on his questions. The real superiority of the Italian bees consists (especially in this new country, where our honey is mostly gathered from wild flowers,) in their great industry in gathering forage and raising brood, in seasons when the black bees do comparatively nothing. The queens are more prolific. The bees swarm more frequently, if left to themselves; and they are almost perfectly moth-proof, Instead of running all over the hive when the miller is around in the evening, they cluster closely at the entrance, and seem to say:—"now come on; we are not going to run after you." They defend themselves from robbers much more effectually than the blacks. They can be handled very easily, without damage from stings, unless after cold weather sets in, in the fall, or after they are done breeding. At such periods I think they are fully as cross as the natives. But let them have a taint of black blood, and they are sometimes as cross as vengeance. You can sit down by a pure swarm for hours, when they are at work, and not a single bee will come buzzing about you. In fact, they mind their own business. On opening a hive to find the queen, or perform any other operation, the queen will not attempt to hide like a black queen; and the bees will stick to their regular business, if they are handled as they should be. The Italians are longer-lived than the blacks. Hence, if a swarm becomes queenless, they keep up their strength considerably longer than the blacks when in the same condition.

That red clover question I answered before in the Bee Journal, but will do so again. I have seen two seasons, since I came west, that black bees worked freely on red clover; but usually, on our rich western soil, neither blacks nor Italians can do anything with it. On sandy land they probably could work on the blossom almost every season. I presume that last season they would have worked freely on it on account of the drouth shortening the cups that contain the nectar; but we had no clover here.

I prefer smoke from chips, rotten wood, or sawdust, to fumigate bees for handling; but use very little at any time—just sufficient to make them ask your pardon, if they show any crossness. I have a strong impression that tobacco smoke makes them irritable and cross, especially if used often, or by a novice. Bees properly handled with wood smoke, never appear to resent it afterwards, even if handled a dozen times a day.

I know of no way to prevent the accumulation of propolis, only to have your frame bearings quite small; and if your honey board fits just right, you will have very little trouble. I allow a trifle over a quarter of an inch between the honey board and frames; three-eighths of an inch between the frame and side of the hive; and half an inch between the bottom board and the bottom bar of the frame. The side pieces of the frames are a trifle over one-eighth of an inch thick, and one inch wide. When thus made and adjusted, there is no fastening of the frames to the hive or honey board with pieces of comb.

Whether we hold ourselves indebted to Mr. Langstroth or not, we are certainly under obligations to him for his hive and book, and for his honorable manner of dealing with his customers generally.

To sum up the Italian bee question in a very few words—I would sooner have one Italian swarm than two natives, for real pleasure and profit. Since the May number of the BEE JOURNAL came to hand, I have received six letters on this same question, and five of them complain that the writers have purchased each an Italian swarm, and the bees are so cross that they dare not go near them. If they have not been badly handled and thus irritated, I should be strongly inclined to think that they are not pure, even if their markings are perfect. It must be understood, however, that when Italian bees are thoroughly aroused, they can and will sting with a vengeance. The hybrids are fully as good as the pure, so far as storing honey and fertility of queens are concerned. But when a purchaser pays for an Italian swarm, he wants and expects to receive what he paid for. If I am rightly informed, humbug is not all confined to this side of the big water, for it is not every imported queen that proves to be pure. I might say more for the Italians, but enough at present.

ELISHA GALLUP.

OSAGE, IOWA.

[For the American Bee Journal.]

Observations and Suggestions.

MR. EDITOR:—Having been for many years a subscriber to the AMERICAN BEE JOURNAL, it has afforded me much pleasure to note the improvements that have been made in its character and appearance, during the last two years; as well as the increasing interest shown in the cause by its numerous correspondents.

Although not a large bee-keeper, I have been more or less engaged in the business for the last twenty years. Since the Italian bees came into notice I have purchased several queens that were supposed to be of the *purest* stock, and by that means have succeeded in Italianizing and hybridizing nearly all of my colonies. In some cases, where bees have been removed to a new and distant locality, my observations have resulted in the impression that their industry and energy were increased by the change; and it is quite reasonable to suppose that the infusion of new and improved blood would have the same beneficial influence in their case which it has on other kinds of stock. But further than this I cannot say that I have found any decided superiority in their favor.

It has often occurred to me that our climate in this immediate locality was one of the worst in the country for bees, as from cold and wet weather, they frequently lose the whole range of the early blossoms; and I think they never accumulate any surplus stores after the first or second week in July. The last season was a very unfavorable one for bee-keepers in this vicinity. Scarcely any surplus honey was made, and very few young swarms will survive the present winter. In consequence of the scarcity of the honey supply, great numbers of bees were lost in the grocery and country stores; and old stocks were much weakened thereby.

Our winters are probably too open and variable to admit of storing bees in special depositories. But I am favorably inclined to the plan of packing and wintering them on their summer stands. For this purpose our common hives might be moved gradually close to each other in the fall, and temporarily boxed around with boards, and filling up the interior space with cut straw or other non-conducting material—leaving a small passage outward for the bees from each hive. They should also be covered over and kept dry. When they are left unprotected, every cold spell will cause the death of a large number. Sometimes a pint or more of dead bees will be found on the bottom board at once. Out-door packing might prevent this, and also allow them to fly out when the weather permits. This plan is only recommended for common hives that are already in use. In making or buying hives, it would be much better to get those which are designed for inside packing.

Most of my hives contain movable frames; but there are also a number of the common square form. Where artificial swarming and queen-raising are practiced, a large portion of the hives should have movable frames; and I look upon artificial swarming as a necessity, where a large number of bees are kept. In raising queens in nucleus hives, there seems to be a difficulty in bringing the first crop to maturity. They hatch out well enough, but seem to get lost in various ways. Comparatively few of the earlier young queens become impregnated in time for the first swarms. But later in the season, there is little trouble in getting a supply of them. Losses then seem to be fewer, but the young queens come in too late for use in making swarms.

I see that some of your advertisers offer to sell pure Italian queens at very low prices—as low even as two dollars and fifty cents each, where twenty-five are included in an order. As we can hardly afford to buy Italian queens for all our stocks, even at these low rates, and are not always successful in raising them ourselves, I, for one, would be willing to try common queens at low prices, if they could be had when needed; and the colonies could afterwards be Italianized. The advantage to be derived from extra queens, so as to be able to give one immediately to the old as well as to the new swarms, is so obvious that some of our friends, who are in the business of selling queens, would do well to prepare themselves for this demand—which, I think would soon become a large one, since they could be sent so cheaply by mail. The recent mortality in bees may lessen the demand for queens, as those who have no bees, will not wish to buy queens.

Another matter, on which I would like to have the views of more experienced bee-keepers, is this: when removing a strong swarm and substituting a weak one—either for the purpose of making swarms, or recruiting weak stocks—is there no danger, from the great rush of strange bees into the weak hive, that the queen of the latter, unless caged, will be destroyed, before they have time to become acquainted with her? So many mishaps have resulted from my experiments in changing hives, that I have latterly adopted the plan of caging the queen, or where, as in the case of a common hive, that cannot be done, of substituting queenless stock for a time, until they have become aware of their loss, and then replacing this with the one that is to remain.

STEPHEN SCOTTON.

RICHMOND, IND.

[For the American Bee Journal.]

Impure Italians, and Queens Mating Twice.

Sometime since a copy of Kidder's circular, giving description and price of Italian bees and queens, came into our possession. In this circular it was claimed that inasmuch as the Italian bee existed nowhere in its purity—not even in its native country, Italy—living as it did in close proximity to our common kind; that as a natural consequence, one, two, and three banded bees would appear simultaneously, in colonies having purely mated Italian queens; and purchasers must be satisfied, if even a majority of the workers have the three yellow stripes around the abdomen.

Now, every intelligent bee-keeper, who has practiced rearing Italian queens, knows that queens from pure mothers having mated with common drones, will beget workers a majority of which will have the three yellow stripes. At least this is my experience. But Mr. Kidder's customers receiving such queens must be satisfied, since a majority of their workers are three banded, and by this mode of reasoning such queens are as near an approach to purity as can be arrived at, from *their present imperfect condition!*

Another tenet in bee-keeping, not less absurd and inconsiderate than that taught by Mr. Kidder, is the doctrine that an Italian queen may and often *does* mate concurrently and consecutively with drones of different species, whereby her progeny are differently marked—some being common, some Italian, while others partake of the character of both. This idea is being disseminated here, by persons engaged in the queen-raising business, and in my opinion is a shrewd invention to blind the minds of those bee-keepers whom they wish to humbug by their spurious queens. Thanks to such men as Langstroth, Gallup, &c., for their regard for truth and the rights of others, by refusing to allow such errors and impositions to be practiced upon the people, without entering their protest.

By the way, allow me to express my thanks to Mr. Gallup for the freedom and liberality with which he has favored us with the results of his observations and experience in practical bee-culture. He is just the kind of man we want to instruct us in the art; and his ideas are of the first class. The size, shape, and practical workings of the hive he has presented for our consideration, I like very much. Long may he live to enjoy the advantages which his favorite hive and long experience in bee-keeping afford him.

J. L. McLEAN.

RICHMOND, OHIO.

[For the American Bee Journal.]

Swarming Without a Queen.

A colony of bees cast a top swarm, without issuing or the queen leaving the hive.

This, Mr. Editor, would seem almost incredible, but there is hardly anything impossible nowadays. The following account of the accession of a swarm to the apiary of James McLean, in accordance with the facts above stated, came under my observation:

In the summer of 1865, Mr. McLean had a swarm issue rather late in the season—too late to secure honey enough to enable it to pass the winter in safety. It therefore died, leaving the hive, however, full of nice comb. This hive, which was a box in the form of a four-cornered pyramid, with glass on its sides, and a slide, by means of which the operations of the bees upon the combs could be distinctly seen. The comb he reserved for a future swarm. The next year, the swarming seasom having arrived, he placed this hive at the side of a populous colony, with its edge a little raised, that the bees, then beginning to lie out, might pass up among the combs and protect them from the depredations of the miller. As the number of bees increased and the storage of honey gradually crowded them out, they wended their way up among the combs and finally began to deposit honey in them. Each subsequent day brought further accessions of honey to those combs; and soon our attention was drawn to the gradual lengthening out of a queen cell on the edge of a comb, which had been started by the bees the season before. This process of queen cell construction progressed from one degree of formation to another, until it reached completion. Then, to our astonishment, after the lapse of sufficient time, a young queen emerged from the cell, to assume undisputed possession of so pleasant a habitation.

In process of time, this hive began to be replenished by bees reared from its own combs; its intercourse with the parent hive ceased; its independence became established; and it now ranks among the first colonies of the apiary.

Query.—Did the bees remove an egg from the parent hive, and place it in this cell; or did the queen lay it there?

JOHN L. McLEAN.

RICHMOND, OHIO.

[For the American Bee Journal.]

Experience with Bee Stings.

I am glad Mr. Gallup has related some of his experience with bee stings; and also that he has recommended water treatment. When I commenced beekeeping a sting was a formidable affair, swelling for several days and obstructing my sight if inflicted near the eyes. Now, although the pain is sharp at first, in a few hours the swelling is at its height, and is generally not noticed. Probably my system has become accustomed to it.

Having tried the water treatment several years, not only in my own case, but for others, I am satisfied that it is the best remedy I have tried, and I have tried many. I have a brother to whom a bee sting is very poisonous. Several years ago he was stung in his upper lip, which swelled badly. A few days afterwards he was stung slightly on his body. Within five minutes his upper lip began to swell; then his face, especially under his jaws, giving him somewhat the appearance of a severe case of mumps. He then began to feel oppressed for breath, and blotches began to come out over his body and limbs, which looked like nettle-rash, and caused him to feel uncomfortable and alarmed. At the same time he felt sick and chilly. We removed his clothing and sponged his body with tepid water. He then began to feel relieved and after lying down a short time felt much better. Subsequently, when stung, his upper lip would begin to swell within three or four minutes; but at no other time have the symptoms been as serious as at the time mentioned.

I should have said that the sting which produced such a marked effect was inflicted by a bee which accidently flew into his shirt bossom, and it appeared to be very slight. If I remember correctly, it was nearly over his stomach; which may account, in some degree, for the remarkable effect produced. But at the same time it must be remembered that a bee sting was and is a serious affair for him whenever inflicted.

A person who intends to keep bees should expect occasional stings, and be determined to bear them with fortitude. This will take away at least half the suffering occasioned by them. By experience a person will know when to expect cross bees, and be prepared for them. I have had swarms intolerably cross when hiving them, and a day or two afterwards would open the hive and handle them with no protector and not a cross bee.

J. L. Hubbard.

Walpole, N. H., December, 1868.

A person who has familiarized himself to bees, can by means of the passion of fear impressed upon them, and by that dexterity in the management of them, which can only be acquired by practice, manage bees as he pleases.—*Wildman.*

[For the American Bee Journal.]

Camphor vs. Robbing Bees.

I noticed an article in the April number of the Bee Journal from A. Grimm, about using camphor to stop bees robbing.

I had two stocks of bees that were being robbed, and I did not think it possible to save them, without removing them into the cellar; but thought I would try the camphor. I had no gum camphor in the house, and therefore took some of the liquid in a teaspoon, and turned it on the bottom board near the front entrance (inside); and in less than one minute every robber bee had disappeared. I never saw such a scampering, to leave. Upon examination both stocks proved to be queenless.

G. R. Ayres.

Springfield, Ill., April 26, 1869.

[For the American Bee Journal.]

A Gentle Reminder.

Mr. Editor:—I have been a reader of the Bee Journal for three years, and peruse its pages with more interest than any other reading matter that comes to hand. I wish I could get a number every week.

Bees are cultivated with some taste in this place. There is one man in town cultivating the honey bee without the Bee Journal. That is, he does not take it. He borrows it occasionally. I don't like very well to lend the numbers. They are gone sometimes when we want them ourselves. Our friend over the way is a clever fellow (as you know all bee-men are); and we will try to get him to send for the next volume.

We got an average yield of honey here last season. Some bees have died through the winter. We are looking for a good time this summer. I will not tax your patience further.

A. P. Durant.

Athens, Ohio.

[For the American Bee Journal.]

Bees in Connecticut.

Mr. Editor:—My bees have wintered finely, under an open shed, covered with straw, cobs, carpet, &c. They have been gathering pollen now two weeks, and are brooding fast.

I look upon your Journal as indispensable to the beekeeper. I would not part with the information contained in three certain articles from your very valuable contributor, Mr. E. Gallup, for the price of a volume.

About "that division board." A very good one can be made by tacking a piece of pasteboard, of the size required, on one of the frames. It will be found light and convenient.

W. H. Kirk.

West Cheshire, Conn.

[For the American Bee Journal.]

Queen Raising in Winter.

Mr. Editor :—Rather an unusual occurrence came under my notice a few weeks since, of a colony of bees raising a queen in mid-water. I will give the facts of the case, throw out a few suggestions, and leave it open to the readers of the Journal.

In October last, I furnished a neighbor an Italian queen—a young one, which had just commenced to lay. After destroying the old queen in a good strong spring swarm, he introduced the Italian queen. They received her all right. The first of December he closed the entrance of the hive, gave them upward ventilation, and removed them from their summer stand to a dry cellar under his dwelling house. About the middle of January, when visiting his bees, to see if they were all right, he distinctly heard the piping of a young queen. He immediately removed the hive to a convenient place, and commenced an examination. He found a good fair quantity of bees and honey, and on the three central cards considerable brood in all stages, and on one of the cards a good-sized queen cell guarded by a cluster of bees. On opening this cell he found a fine, young, full-grown Italian queen; and on one of the other cards he found the old queen, apparently all right. He destroyed the young one, and removed the hive to the cellar again.

Now I would like to know if any of the readers of the Bee Journal has ever had a case of the kind come under his notice. Does it not at once settle the point, that the royal jelly, a food given to young queens, is nothing more or less than honey, pollen, and water? For, in the above case, there could not possibly have been anything more obtained by the bees. Does it not also account for so many colonies having drone-laying queens in the spring, when returned to their summer stands? Last spring I myself, had, out of thirty stocks all right in the fall, three drone-laying queens; and those were in hives that had in them, in the fall, young prolific queens of that season's raising. Possibly they raised another queen, for some cause unknown (to me at least), like the colony above referred to; and when the queens were allowed, by the bees, to come together, the prolific one happened to be slain. This of course would leave the hive with a young queen, without a possibility of her becoming fertilized.

I have now given the facts of the case, and hope to hear from some of the readers of the Journal, who have had more experience than myself.

H. M. Thomas.

Brooklin, Ontario, Canada.

The goodness and flavor of honey depend on the fragrance of the plants from which the bees collect it.

The honey gathered by the bees early in the spring is finer and preferred to that gathered in the fall.

[For the American Bee Journal.]

Dividing Bees, or Making Artificial Swarms.

There are several ways in which bees may be divided and artificial swarms made, with comparative success. The object should be, however, to make artificial swarms, that are in every respect equal to natural swarms, leaving the parent stock in equally good condition also. To do this, we require to keep as close to nature as possible. In other words, we must act in perfect harmony with the nature and habits of the bee. It would then be well to inquire, what is the true condition of the parent stock, after a first swarm has been cast; and of the first swarm after it has been hived?

It is well understood that the old queen goes with the first swarm, and a very large portion of the bees—that is, worker bees, as the drones always remain in the parent hive until the second swarm issues, which always contains a young queen. It is well understood, also, that the first swarm seldom issues until queen cells are commenced and young queens are being developed. It will be seen then that after a first swarm has gone off, the parent stock has but few bees, and no queen. It is, however, full of combs filled with young bees in all stages, from the larvæ to the full grown bee issuing from the cells, and young queens which will be matured in about nine days. Such then is the natural condition of the parent stock, after a first swarm has issued in a natural way. The first swarm after being hived is in the following condition. It has an empty hive—a hive without comb or honey; but it has a laying queen and a large number of bees.

Now how shall we divide a colony so as to secure the same conditions to both stocks? If we could do this, and make our swarms a few days earlier than they would swarm if left to themselves, and save the trouble of watching for swarms to come off, and the loss of bees going to the bees it would be very desirable.

I will now give my method of making swarms, and the reader may see how near I keep to nature. I wait until I see some signs of swarming, or near to swarming time, generally to about the time queen cells are being started. I then go to the hive I wish to divide and search for the queen by looking over each card of comb carefully. As soon as I discover her, I put the card of comb on which I find her in a new empty hive from which I have removed one frame. I then put the frame in the old stock, in place of the card of comb I removed. I now remove the old stock away some distance to one side, putting it on a new stand; and set the new hive, in which I put the queen, on the stand were the old hive stood. The result is, the bees will rush out of the old hive, return in large numbers to the old stand and enter the new hive, where they find their queen, but an empty hive.

It will now be seen that the old stock or hive will lose a large proportion of bees and the old queen, the same as in the case of a first swarm going off naturally; but it will contain all the combs, honey, and young bees, save what are contained on the one card removed. If queen cells were not already started, they will at once start them, and a queen will be matured in ten or twelve days, only a day or two longer than when a swarm issues naturally. The swarm in the new hive will be in just the same condition as a first swarm would, except that they have a card of comb instead of an entirely empty hive; and the next day even this card of comb may be removed, first shaking off all the bees and the queen, and replaced in the old hive again, leaving the swarm to build all new combs, as in natural swarming.

It will be seen at a glance that nothing can be nearer nature, than the plan I give. "But," says some one, "it is difficult for me to find the queen, and I would like some method that I could practice, without searching for the queen." Here it is, then. When you wish to make a swarm, first remove the stock you intend to divide a short distance away, and set an empty hive on the stand where the stock stood. Now remove each card, carefully shaking off or winging off all the bees back into the hive, and place the card in the empty hive. By the time you have placed them all in, there will be bees enough return to nourish the brood. Having put frames into the old hive from which you have just removed the cards of comb, place it again on its stand, removing the new hive into which you have put the cards of comb to a new stand. It will now be seen that the queen and a large portion of the bees will be on the old stand, in the old hive now filled with empty frames, and like a first swarm will go to work and fill their hive with new combs. Care must always be taken that the hive containing the combs has bees enough to nourish the brood.

I would here remark that whatever method is practiced, it is absolutely necessary that the old queen be in the empty hive, as bees always build drone comb when they have no queen; and every method that does not recognize this fact should be rejected. J. H. Thomas.

Brooklin, Ontario.

[For the American Bee Journal.]

Reply to B. C. Auchampaugh's Questions About Patent Rights and Claims.

Mr. Editor:—I will answer, as briefly as I can, the questions of B. C. Auchampaugh, in in the last number the Journal.

And first, let me assure him that he is entirely mistaken in supposing that I claim to be the first inventor of all kinds of movable frames, as the following extracts from page 209, 3d edition of my work on bees, published in May, 1859, will plainly show. "I have before me a small pamphlet, published in London in 1851, describing the construction of the "Bar and Frame Hive" of W. A. Munn. The object of this invention is to elevate frames, one at a time, into a case with glass sides so that they may be examined without risk of annoyance from the bees."

In the June number of the Bee Journal for 1861, page 142, is a communication which first appeared in the "Country Gentleman," some extracts from which will make this point still clearer to your correspondent:

"When I applied for a patent, I was not aware that movable comb hives had ever been used, except those with movable bars or the sectional frames of Huber. The former required the combs to be cut from their side attachments, while the latter were so costly and demanded so much experience, time, and patience, to open and close the sectiosn, that notwithstanding they were invented at the close of the last century, they were confined almost exclusively to amateur bee-keepers. * * * * * * Since my application for a patent, I have ascertained that prior to my invention other movable frames besides those of Huber, were in use in Europe. None of them, so far as I can learn after thorough inquiry, are any better than those of Huber. I would refer those who desire information on this point, to the *Cours Pratique d' Apiculture* of Mr. Hamet, published in Paris in 1859, which contains a larger variety of cuts and descriptions of hives than can be found, I believe, in any other work. All the modifications of the Huber hive are pronounced by Hamet to be useful only for purposes of observation; and he asserts that, in the districts of France, where bee-keeping is most largely pursued, no movable frame hives have ever come into general use—and that the removal of the frames from the best of them is often more difficult than from the Huber hive. He closes his account of these hives with the significant remark that, "in a moment of enthusiasm" he once supposed that such a hive might be cheaply made, but that he had tried in vain.

"Now compare these results in France with the extension, by the best practical bee-keepers of this country, of the movable comb principle, and the inference will be almost irresistible that they have not *yet* invented a cheap and practical way of using movable frames. * * * * * Of all the movable frame hives now in use on the continent of Europe, the Berlepsch hive is probably the best. It was invented subsequently to mine, and uses the essential features covered (in this country) by my patent, without which the German hive would have had no more practical utility than those which have so signally failed.

"Allow me to give an extract, in this connection, from a letter received by me last fall from the Baron Von Linsingen, of Osnabrück, Kingdom of Hanover, dated August 10, 1860:—'I feel convinced that no other apiarian has been able to construct a movable comb beehive in such an advantageous way as you have done.'

"Were I to attempt to show in what particulars the various patents in this country, using movable frames, have appropriated to a greater, or less extent, the essential and patented features of my invention, I should require more space than in the largest liberality you would be willing to give; besides opening a personal controversy in which comparatively few of your readers would feel any interest. This much, however, I wish to say, that in my opinion all of them use some of these features; and that without this use they would be of no more practical value than the European hive. * * * * * * * I have never sought for more than my right, and if any one can show that before my invention there existed any movable frame hives adapted to practical use, or any invention that used the essential and patented features of mine, I will try to be the first to acknowledge that, though an *original* inventor, I was not the first inventor of such a hive."—L. L. Langstroth.

A few remarks will show Mr. Auchampaugh why the Patent Office is continually granting patents on inventions which use some, or all, of the patented features of my hive.

Suppose that A makes and patents an invention. B makes what he calls an improvement, using, however, some of the features covered by A's patent. In his application for a patent he confines his claim to the new feature which he has invented. Could the Office, with any show of right, refuse his application? They must take for granted that after his patent issues, he will obtain a license from A to use the patented features without which his invention would be worthless; or that, if he attempts to use or sell his invention without such a license, A will resort to the Courts of law for redress. C, D, E, &c., may each patent successive improvements; and all of them, if they use A's patented features, must get license under him. If C uses any of B's patent, he must also get a license from B; and the patentee of the last improvement must obtain license from all the parties whose patented features he uses. It will then be seen that, in the cases supposed, the first inventor is the only person who can use his own invention without any license; and that he can not use a single improvement patented by other parties, without license from them. This is all manifestly right; for, if the first inventor could prevent other parties from patenting improvements, where would be the inducement to others to attempt to perfect any invention; and if improvements using features already patented, could be made and sold without license from the first inventor, where would be the inducement for any one to spend time and money in patenting an invention, when any improvement could deprive the original inventor of all pecuniary profit for his own invention? From ignorance of these important principles of patent laws, the public are often grossly deceived. Some one, for instance, patents what he calls an improvement on some valuable patented invention. With his patent, to which the great seal of the United States Patent Office has been duly affixed, he goes around among those who are entirely ignorant of such matters, to sell his invention. If he is brazen-faced in his dishonesty, he will, when asked what features his patent covers, boldly assert anything in the machine or patented article—the fact often being that the feature really covered by his patent is some worthless conceit, for which the purchaser, if he knew what he was buying, would not pay a single cent; while the thing that attracts him, and the right to use which he supposes he is buying, is something not claimed in the patent shown, and is really the property of another. The old latin maxim, "Suppressio veri suggestio *falsi*," (the suggestion of falsehood by the suppression of truth) is plainly applicable to all parties who advertise and sell any patent which cannot be legally used without a license from some prior patentee, whose patented features are used in such invention. The only excuse which can save the honesty of such parties, is the plea of ignorance, which certainly cannot be applied to most patentees; and as far as regards my claims, cannot be of any avail to those who persist, after this exposal in ignoring my rights.

I am increasingly confident that no movable comb hive can be invented, that, in the long run, will stand the test, which does not use one or more of the patented principles of my hive. Do I seem to claim too much, or in a boastful spirit? If I was the first to invent (as I think I was) the combined features essential to success, I was like the company who having the choice of routes for a railroad or turnpike, selected the best and shortest one between two termini. Those who search for another and independent route, however sanguine they may be, can never get as good a one; any more than a way can be found between two given points, shorter than a straight line. Nearly all the movable comb hives in use in this country and Europe, use some of the essential and patented features of my invention; and I feel little hesitation in predicting that the few which use none of these features will, on thorough trial, be discarded by all who desire to obtain the highest degree of pleasure or profit from bee-culture.

L. L. Langstroth.

Oxford, Butler Co., Ohio, June 4, 1869

[For the American Bee Journal.]

Swarming on Foot.

Several years ago, while yet keeping the black bees, a hive of bees, in the swarming season, in plain view from where I sat at dinner, commenced pouring out of their hive in regular swarming style. But, singular enough, not a bee took wing. Before there was a pint of bees out, I set an empty hive a few inches from the first, on the same board, and brushed in a few of the bees, These set up their usual humming, and drew in the whole colony as it issued on foot. I left this swarm where it was, and it prospered finely. I may add that the day was rather cool.

John L. Davis.

Holt, Mich.

Great improvements may certainly be made in the essential article of providing plenty of pasture for bees, whenever this subject shall be more carefully attended to than it, unfortunately, has hitherto been.—*Wildman.*

Bees themselves may be reckoned enemies to bees; for they sometimes wage cruel wars against each other.

[For the American Bee Journal.]

Honey Dew.

Mr. Editor:—I will give the readers of the Journal my knowledge of honey dew, as it was requested in number 10, for April, 1869. I have been acquainted with this species of dew, in the State of Maryland, for twenty-five years. I have never known it to miss for six years, at any time. It has no regular period, but appears to fall for two or three years, and at times will miss a year, and so on. Men who have noticed it in Ohio, tell me the same.

I never knew it to fall later than July. In July, 1868, I was in Maryland, and it was a very dry time. We had three dews, which was all the bees could get at then, and they went for it strong. The woods were alive with bees; and they filled their hives below, and started in the boxes.

This dew, so called, stands the sun very well. I was often told that if the sun shone hot on it, it would waste away. To convince some how it was affected, I gathered some leaves with the dew drops on, and laid them on a rock, where the sun could strike it all day, and it was as hot as I ever felt it. In the evening the leaves were dry. They lay there all night, and in the morning the dew was as good as on the first day. I am sure that if the bees do not get it all the first day, they can get it from day to day, until a rain comes and washes it off.

Bees like this dew. It makes a very nice honey, and bees live on it as well as on any honey that they gather. Its color is somewhat like our best syrup molasses, but it makes a very nice and good honey. Its effect on bees, I must say, is perfectly harmless. I am satisfied of this, by experience. In the State of Ohio, I never saw many honey dews; but, I think, from some cause or other, five swarms die here for one in the Eastern States.

About the sugar this dew may contain, I am not prepared to say. I have no doubt it will make sugar, as all other honey does. Bees gather other substances that would not make sugar before they make honey of it. If bees will not live on anything but sugar, then it certainly contains sugar, for I know they live on the honey made from this dew.

Where this dew originates I do not know; but I am sure it is no insect honey. The writer spoke of salt dew. I suppose that about the salt lakes we might find salt dew; and so this may come from a honey lake source, though the climate might change the dew.

This is my experience of honey dew, as a response to the request of a writer in the Journal.

M. D. Fogel.

Alpha, Greene Co., Ohio, May 21, 1869.

Antonine, the martyr, in the seventh century, speaks of the honey of Nazareth being most excellent, and in the present day bees are extensively cultivated at Bethlehem, for the sake of the profit derived from the wax tapers supplied to the pilgrims.

[For the American Bee Journal.]

Inside and Out.

On examination in the fall of 1868, I found four stocks, so very deficient in both honey and bees, that I concluded to place them in a cellar, where the temperature was uniform at about 45°. It was perfectly dry and the hives were on a bench, three feet from the floor. One stock, the weakest of all, was in a common box hive, with a two-inch hole in the top. I left the bottom entrance open, but closed the hole in the top, by placing over it a glass jar filled with candy, of which they consumed three pounds. When placed out, March 14th, they worked eagerly at meal, and to-day (June 1st), this stock is one of my strongest. I continued the candy feed until the apple trees were in blossom, using altogether less than five pounds. The three other stocks were in movable frame hives. I closed the entrances, and placed candy over the holes in the honey boards, so that they could come up when they chose. They were very uneasy. At first I thought they required *more* ventilation, and I raised the honey boards; but they were still more restless. I soon found them dying with dysentery—covering combs, frames, and hive, with the black excrement so well known to most beekeepers. This was a clear indication that my treatment was not adapted to their case. So placing the candy on the frames, over the bees, I made all tight and warm overhead, opening the bottom ventilators. They revived, and I found no more dead bees on the bottom boards. Though very much reduced in numbers, they were active in carrying in the meal, as soon as placed on their summer stands. I have satisfied myself that *upward ventilation is not adapted to weak stocks placed in a cellar.*

I wintered sixteen stocks on their summer stands; with all upward ventilation closed, and bottom ventilators left open. They were in single board hives. *I turned the entrances towards the north*, which saves many bees--for as the sun does not strike the lighting board, they do not venture out, except in very mild weather. The hives had no shelter, but remained exactly as in summer. All but one wintered spendidly, and that one was a common box hive which had evidently lost its queen, for there was plenty of honey, but very few bees. I believe this turning the hive will be found very valuable by all who winter out of doors; but I do not remember to have seen it recommended or suggested in the Journal.

Apiarians should remember that their location must determine the best method of wintering their bees. In this neighborhood, where we are almost sure to have one or two warm days in every week, I believe it is much the best to leave all the stocks which are in good condition, on their summer stands; but I have equal confidence that very weak stocks can be wintered safely and cheaply in dry cellars, by feeding candy, *without upward ventilation.*

Is the Loss of the Sting Fatal?

One cold morning in April, I visited my hives before breakfast, and found a large mouse which, in trying to effect an entrance through a hole too small for him, had become wedged, so that he could neither advance nor return. He was was covered with bees, all seeking an unoccupied spot to deposit a sting. He died a few minutes after I released him. I counted thirty stings left on his tail alone. The bees crawled back into the hive as soon as I removed the mouse. As the morning was damp and cool, no bees flew till nearly noon. I then examined the hive and found no dead bees, nor any on similar examinations for several days. Did the bees which had lost their stings all wait until noon, and then fly out never to return? Or is it possible they could have survived after so fearful an injury?

I wish, through the JOURNAL, to thank Mr. Gallup and many other of your correspondents, for their valuable suggestions and experiences. In the matter of ventilation I do not dispute the accuracy of "Gallup's" system of inside wintering strong stocks, with upward ventilation. But that applies to steady cold winters, and not to our changeable climate. Poor Novice's list of reverses would have been less appalling had he left his bees on their summer stands.

C. D.

STANWICH, CONN.

[For the American Bee Journal.

Cheap Unpatented Bee-Feeder.

MR. EDITOR:—Seeing a description of a bee-feeder in the BEE JOURNAL, I send you a description of the one I use, and which I like very much.

Make a box out of half-inch lumber, four inches wide, eight inches long, and two inches deep. Nail it together firmly. Then run beeswax around the corners, to keep it from leaking. Now bore one or two one-inch holes, with a smooth boaring bit, through the bottom at one end. Just back of these holes, or one and a quarter inch from the end, make a partition one inch high, to keep the honey from running down into the hive. Two inches and a half from the other end, make another partition. Let it set up one-eighth of an inch from the bottom, and come one-fourth of an inch above the top of the box. Now make a float to fit the central apartment, to keep the bees from drowning. Drive a few brads into the bottom of the box, to keep the float one-eighth of an inch from the bottom at all times. Put a glass, five by six inches, over the end into which the bees have access, and the feeder is finished.

You can now pour honey or sugar syrup into the other end, which, passing under the division board, raises the float without, disturbing the bees, or attracting robbers. There is little or no loss of heat from the hive, and it is very convenient. Another advantage is, there is no patent on it. JAMES E. CRANE.

BRIDPORT, VT., May 7, 1869.

MELISSUS, King of Crete, is said to have been the first who invented and taught the use of bee hives.

[For the American Bee Journal.]

Results of Wintering.

In the May number of the JOURNAL, page 212, I notice Novice's account of his reverses. I expected something of the sort, but not that it would go as far as it seems to have done. Those who have read my article on wintering bees, in the December number, page 108, will have seen at the conclusion of it that I was just reducing my stocks to fifteen to feed for winter. I reduced to fourteen and fed as I said, and had them all ready for winter by last of November, on the same plan then described. Every stock wintered safely. No further feeding was required until near March, when I commenced giving them a spoonful a day to each hive, to stimulate breeding, as they were all weak as regarded both bees and stores. One stock I found, in April, with a drone-laying queen. I thought the best plan would be to take off her head at once, and unite the bees with the next weakest stock, which I did.

My neighbors all laughed, as usual, at my folly in going to so much trouble as to haul a load of straw to winter bees, &c. But in spring, when they found that all my bees were alive, and not a live stand of their own left—some having lost as many as sixty stands, (all they had,) they changed their minds considerably. They say the disease went all around me, but spared my bees; though I tell them it was no disease at all. I agree with Burbank, Gallup, and a few others, as to what was the cause. I am surprised that Novice thinks it was a disease that killed his bees. In my opinion it was his own imprudence, in delaying so long to place them in the cellar. However he may differ from me in opinion, we are now on equal terms and will take a race. He has thirteen stands, and I had thirteen on the 3d of May, when swarming began in my apiary. His aim is to increase his stock; and that is my aim also at present. I now have thirty-one stands, all natural swarms, and four old stands have not swarmed yet. Every one of these swarms came out in May, except the last one, which issued to-day, June 2. The first swarm, which came out May 3, is about to swarm again; and if the remaining old stands do not send out swarms this week, I shall next week make artificial swarms from them. I prefer natural swarms, when they come early enough. The season is first-rate, and several of my stands have their caps about full.

Does Novice want to know the secret of my success? Well, tell him that as all, or ninety-five out of every hundred of my neighbors' stands died last winter, I procured all the clean combs I could, and fastened them into frames, and so saved my bees the labor of gathering sixty pounds of honey first to fill the frames, and then forty pounds more for cap honey, provided the season is not then over. Had I reared early queens, my success might have been almost as good again; but I neglected this, fearing I should weaken my stands.

I would suggest to Novice to try ten stands on my plan next winter. I will report the result of this season's operations in the September number of the BEE JOURNAL; and hope Novice will do the same. If it then appears that he has beat me, I will send him an Italian queen of my own rearing. I am sorry for his reverses, as a man who cares as much for his bees should not meet with such reverses.

The BEE JOURNAL should, by all means, be sustained. What would beekeepers do without it? Then let them pay in advance promptly, and not neglect it like myself for a year, or nearly so, simply because my last money was stolen from the letter. Though I live thirteen miles from the nearest money order post office, I will procure an order, to insure safe transmission this time.

R. M. ARGO.

LOWELL, KY., June 2, 1869.

[For the American Bee Journal.]

Reply to Charles Dadant.

Yes; the drone cells were cut down to the same depth; and made same size, on the other end, as worker cells. And I have seen eggs, after they were laid, in both worker and drone cells less than half the usual depth; that is, they were in process of construction when the eggs were laid. On the 25th of May, this year, I found a piece of drone comb that had been placed on the honey or top-board, or sticks, so that the bees could carry the honey out of both sides; and it being left too long, the bees built new comb upward from the horizontal piece of old comb, making curves until they could assume the upright or perpendicular. There were eggs and brood in both sides, old and new comb; some of the brood were capped. Now would those that stand on their heads hatch out queens? Being anxious to destroy nearly all the drones in my apiary, having cut out all drone cells from the worker combs, and inserted enough in frames by themselves to control that kind of stock, I did not like to be controlled by the bees or queens, and hence destroyed the piece of comb referred to, too soon for knowledge.

Bees have done better this spring on fruit, flowers, and the dandelion, (*taraxacum*), than ever before, having commenced to swarm on the twenty-fifth of May. Many stocks have more honey in their hives now than they had last fall.

JAMES M. MARVIN.

ST. CHARLES, ILL., June 3, 1869.

Oil of olives, or any mild oil, is thought by many to be a cure for the pain and inflammation arising from the sting of a bee; but repeated experiments have shown that it fails oftener than it succeeds. It seems probable that the success sometimes met with, is rather an accident than a cure; for there are many people to whom the sting of a bee does not occasion any pain or inflammation. Some men disdain to use the least precaution, even when they are sure of manystings.—*Wildman.*

[For the American Bee Journal]

Non-Swarming.

In the May number of the JOURNAL, C. E. Thorne, of Selma, Ohio, asks if the bee disease can be connected with the fact that the bees cast no swarms during the season. I answer positively, No. I have been keeping bees in a small way about twelve years. I found a very small swarm on a brush pile, late in June, 1856, which I put into a hive ten inches square by eighteen inches high. They managed to get stores enough to carry them through the following winter. The next season they filled up the hive and got quite strong, but did not swarm. In May, 1858, I found a swarm in a hollow shell-bark tree, which I cut down and sawed off immediately above and below their stores, which occupied a space about four feet long and from six to ten inches in diameter. The main entrance was within six inches of the top, and a very small hole near the bottom. They swarmed in about two weeks after I got them home, and never failed to give me one or two good swarms every year, until in 1867, the log got so rotten that it would hardly stand alone. My other long hive did about as well. I gave away and sold several swarms, yet in the fall of 1867 I had sixty-three stands, when I took up some of the oldest and some of the weakest—leaving me an even fifty over. These were in good condition, and bid fair early in the following season to yield a large harvest. All lived through the winter, and yet I did not obtain a single swarm from them. They are all doing well, except two that lost their queens this spring. These had got tolerably wormy when my first swarm came off, on the 27th ult. I put it into one of these old hives, with the old combs and worms. Next morning I picked up about twenty cocoons, with moths nearly ready to come out, and quite a number of worms. They have cleaned it all out, so that I did not find a single worm this morning; and they have commenced work in the honey boxes, which I put on the next day after hiving them. I have another swarm which I put in with the other weak stand, and they are doing about as well as the first. I have already had eighteen or nineteen swarms. My bees are all common black bees, and are in common box hives made according to Quinby's old plan. I have never paid much attention to them, except to hive them when they swarmed and put on honey boxes, and take them off again when full. I have generally let them take care of themselves.

I think Mr. Gallup is a little mistaken about bees all dying, unless they had access to buckwheat. I do not suppose there was a peck of buckwheat sown within five miles of my bees, yet I did not lose a single hive; though many died in town and out on the prairie. I suppose it was the crab apple honey that saved mine. Some of them had two eight-pound boxes nearly full on the first of June last year. They all had some, but cleaned it nearly all out before the first of September. After the rain set in, in

September, the strongest stocks stored considerable honey in the boxes. Some of this I gave to the weak ones, which carried them through all right.

C. T. Smith.

Trenton, Clinton Co., Ils., June 3, 1869.

[For the American Bee Journal.]

Does it Pay to Keep Bees?

Having often been asked the question, does it pay to keep bees, or is it safe to invest money in an apiary? I have always answered the question by saying it does pay and is a safe investment, if the party investing thoroughly understands the nature and habits of bees, is willing to give them the proper care, and provide them with suitable hives. I now propose giving a short account of my success in bee-keeping.

Some fifteen years ago, I purchased two colonies, not with the intention of making money out of them, but for the purpose of providing myself and family with a luxury in the shape of nice, pure, white, honey. But I soon became convinced that, by proper management, they could be made to yield a profit, besides supplying my table with a wholesome luxury. Still, as there were at that time no movable comb hives, I had to labor under considerable disadvantage as well as loss. Very often some of the stocks would refuse to swarm until the season for collecting honey was nearly over. Consequently the young swarms could not gather honey enough to winter on, and not having the movable comb hives, these could not be built up from stocks that had plenty of honey and some to spare. Hence I was forced to destroy them in the fall, which was a loss. Other hives would refuse to swarm altogether, which of course was a loss of all increase from such. Then, again, some colonies would swarm and the young swarm would take a bee-line for the woods and disappear. Other hives would get infested with millers and worms, which would destroy them sooner or later. Yet, after all the losses from every source, I made a fair profit by selling honey, and occasionally a hive of bees. But since the introduction of the movable comb hive and the Italian bees, I have made more than double the profit; for there has been no loss from young swarms going to the woods, or from colonies refusing to swarm, or being destroyed by the miller. For I have practiced artificial swarming, which does away with all loss in that direction; and if millers get into a colony, I remove the cards and clean them out, thereby saving my stock. I also remove cards of comb from full stocks that have them to spare, and strengthen weak ones therewith, instead of destroying them, as I was forced to do formerly. Then again, the Italian bees defend themselves much better from millers, and are much better workers, consequently they store more honey in the boxes for their owners.

I commenced in the spring of 1867 with twelve Italian stocks, worth at that time about two hundred dollars. Last week I sold the increase of stocks for five hundred dollars, and during the two years I realized four hundred dollars in wax, honey, and queens sold. Allowing two hundred dollars for cost of hives and time in attending to them, (which will more than cover it), leaves seven hundred dollars, or three hundred and fifty dollars profit each year—not bad interest for two years.

A word, now, to parties intending to start an apiary. Get, if possible, a location where white clover is plenty; or, better yet, induce your neighbors to sow alsike clover, which is one of the most profitable crops a farmer can raise, either for seed or for hay, or for both; and for bees it is ahead of anything I ever saw. Provide yourself also with good movable comb hives, and the Italian bees; and be as attentive to them as you would be to any other stock from which you expect to derive pleasure and profit. An apiary started with such advantages, I am satisfied will, with proper care, prove to be a safe and profitable investment.

H. M. Thomas.

Brooklin, Ontario.

[For the American Bee Journal]

Artificial Swarming.

Mr. Editor:—I have a new method of artificial swarming, which I will try to explain to you.

First—I make my hives thirteen inches by nineteen, inside measurement, with the frames running crosswise. I have two entrances, one on the east and one on the south. Part of the bees will use one entrance, and part the other. As early as it will do to raise queens, place a partition board in the centre, with six combs on each side; and give the queenless side a queen cell after once getting a supply. Now we have two swarms of bees in one hive, and we get an equal number of old and young bees in each side, and they will keep each other warm.

As soon as they need more room, place an empty hive right up against the entrance of the one you wish to change, (the entrance of the new hive to be directly in front of the old entrance); and take out the frames and bees; put them into the new hive, and give each more room. If the hives are of the same color, the bees will not notice the change; and by moving them a few inches every day, they can be placed wherever desired.

This is a new idea of my own, and I shall soon put it in practice. I thought I would send it to you in season for the June Journal, and give others a chance to try it.

Hives might be made large enough for sixteen frames. Then give each side two empty frames, and let them remain together till the bees fill them, and they will each be quite good sized swarms.*

J. L. Peabody.

Virden, Ills.

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*The Dzierzon "*twin hive*"—shown in Bee Journal, vol. 1, page 15—is constructed substantially on this plan, and has long been thus used for the multiplication of colonies. It is a movable *bar* hive, and Mr. D. claims very positively that it is "the best hive yet introduced."—Ed.

THE AMERICAN BEE JOURNAL.

WASHINGTON, JULY, 1869.

☞Subscribers to the BEE JOURNAL residing in Canada, whose subscriptions ended with the fourth volume, will please renew them if they desire to have the paper continued, as the postage has to be prepared here. Mr. J. H. Thomas, of Brooklin, Ontario, is our authorized agent there.

Want of room, in this number, compelled us to omit a portion of Mr. Lambrecht's article, in which he further illustrates his views of the bad qualities of wooden hives, and advises the adoption of straw hives instead—especially one devised by Mr. Gravenhorst. Of this we shall endeavor to furnish a description hereafter; though we are inclined to think American beekeepers would prefer the straw hive patented, in this country, by Mr. Henchen, of Minnesota; if such are to be adopted.

Wooden hives, as used in Europe—and here too, if used in the same manner—may be, or at times become, liable to the objection urged against them by Mr. L.; but they possess so many advantages and conveniences in other respects, that the use of them is not likely to be abandoned either abroad or here. The effort, therefore, should rather be to devise some mode of obviating the objection, than to discard the material. This we conceive is best attained, in out-door wintering at least, by the judicious use of upward ventilation, whereby excessive condensation of moisture in hives is prevented, at a season when it cannot readily be removed by the bees. As soon in autumn, or the early part of winter, as moisture begins to be condensed in a hive, give just sufficient upward ventilation to check this condensation and keep the hive and its inmates dry. Let this be thus continued until towards the approach of spring, when brooding recommences; then water is needed, and the bees can appropriate condensed moisture in preparing food for the larvæ. Thus managed, the possible cause of foulbrood *from this source*, will be removed, the combs will not be enveloped in mould, nor the bees likely to be troubled with dysentery.

The condensed moisture is mainly derived from the ordinary insensible perspiration of the bees. This perspiration should be allowed to pass off freely in winter, and without condensation, if the bees are to remain healthy. Nor should a hive be so warm and tight as to increase the perspiration to a regular sudation, and keep it in perpetual flow. Bees could no more survive such treatment and keep in health, than men could if confined in the sudorific atmosphere of a close chamber. In a wooden hive having a good, thick, close-fitting bottom board, with tight and stout side walls, out-door wintering can be successfully accomplished, if judicious use be made of upward ventilation. This, German beekeepers, proficient as they are in other respects, have yet to learn. They condemn top-opening hives as allowing heat to escape too freely in winter, which they regard as certain to prove ruinous to a colony; whereas, were the truth as they conceive it to be, *we* should not have had a hive survive the winter years ago. How, when, whether, or to what extent, if at all, upward ventilation should be used, where bees are wintered in cellars, vaults, or special repositories, we do not undertake to say, as we have had no experience in that line. Experiments, with careful observation, can alone furnish satisfactory replies to those questions.

One of our earliest subscribers, remitting for our fifth volume, sent us his photograph, and suggests that other beekeepers should follow his example, to enable us by and by to get up, for our gratification, "a big album, *with three yellow bands*." The idea is original, and a volume exceedingly interesting to an editor might thus be *compiled*. One of our North Carolina friends sent us, some time ago, a photograph of his apiary, exhibiting tasteful arrangement and evidencing careful management.

Many persons when first told that, in this latitude, and in the genial months of May and June, the queen bee lays about two thousand eggs a day, and can, and oftimes does, lay three thousand in that brief period, receive the information with evident incredulity—seemingly assenting to the statement only on the ground of impossibility and from courtesy. These have much yet to learn of the wonders and mysteries of insect life, and will find, as they proceed, if they *do* proceed, that that which they received with surprise beyond belief, is really, comparatively, a small matter. Thus, in prolificness, the queen bee lags far in the rear of her royal sister, the queen of the *white ants*. In a recent communication to the *Ohio Farmer*, Dr. Lane, speaking of what he saw of this insect in his visit to Siam, says:—"The country is literally full of these pests, and they seem to be as diligent as ants were in the days of Solomon, for they were always at work, and in almost every place. It often seemed to me surprising that there could be so many, until I I learned that a single female is capable of laying *thirty millions* of eggs in a single year, or *eighty thousand* in a day. After this I ceased to *wonder*, and was thankful there were no more." As one of these queens lives two years in her perfect state, the multitude of her offspring reaches a figure in comparison with which that of the most fertile queen bee dwindles almost to insignificance.

Mr. C. F. Muth, of Cincinnati, having successfully tried the Uhle process of introducing queen bees, described in the May number of the BEE JOURNAL, writes to us as follows, under date of June 19.

"On Monday last I took a small tumbler full of syrup made of sugar, and flavored it pretty strong with grated nutmeg. I removed the queen from a hive of black bees, and fed the bees with most of the syrup. I then opened an Italian hive, caught the queen, and holding her with the thumb and fore-finger, dipped her several times in the syrup left in the tumbler, and set her on one of the combs of that hive of black bees. The third day after, on Wednesday afternoon, I examined the hive, and found the Italian queen, bright yellow as she was, marching among the black population as quietly as it she were still among her own people. This, no doubt, is a success; and this mode of introducing queens is worth very much to the beekeeper."

Dr. Devron writes us from New Orleans, on the 17th instant, "With me swarming (natural) commenced on the 19th of March—three weeks or a month earlier than the previous year; and I have already, within two weeks, obtained some two hundred (200) pounds of surplus honey from four (4) colonies, swarms of this year, placed in empty hives of the Langstroth pattern. Two swarms were Italian hybrids, and two ordinary black bees. No material difference found in the quantity or quality of the honey, save that the first swarm, having laid the surplus in frames, gave alone about eighty (80) pounds. In the North, wintering the bees is the trouble. Here it is in summering them, in exceedingly dry or rainy seasons, when *virgin* swarming or starvation often produce desertion or useless swarms."

It it stated, in a Silesian agricultural document, that, since 1850, when he introduced the Italian bees in Germany, Mr. Dzierzon has reared and sold about *five thousand* queen bees, at an average price of five dollars each. This might seem to be a large and profitable business; but when we reflect that it is the net product of fourteen years' unremitted labor and attention, and that meanwhile probably five-fold that number of queens were reared and lost, or proved to be of no commercial value, it can hardly be regarded as a very remunerative employment.

Correction.

In the report of the Michigan Beekeepers' Convention, published in our last issue, Mr. Moon is represented as having said that "he could control the time of swarming as follows: Raise queens artificially, and by putting one in a large full stand, swarming immediately takes place."

Mr. Moon says it should have read *queen cells*, instead of queens. He also adds that those cells will sometimes be destroyed.

[For the American Bee Journal.]

A Rare Case.

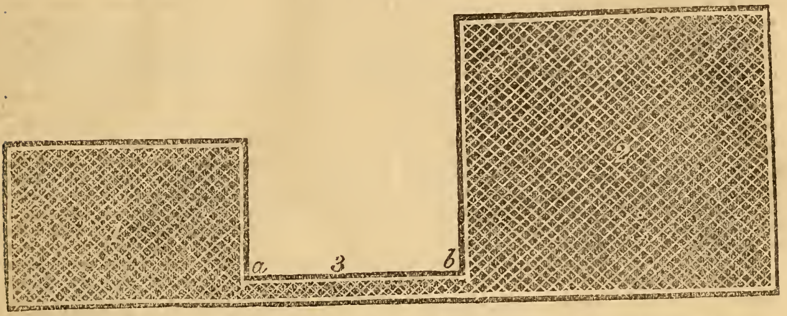
I had a rather singular occurrence happen in my apiary a few days ago, such as I have never known before. I had a young Italian queen reared in a nucleus. One day I went to it and found that she had that day met a drone; and having a stock from which I had taken a queen, I thought I would introduce her there, which I did. The stock was standing some twelve or fifteen rods from the nucleus. Several days after, on opening the nucleus, I found the young queen in there, with indications of having again met a drone. In endeavoring to catch her, she took wing and I have not seen her since.

C. H. HOYT.

NORWALK, OHIO.

[For the American Bee Journal.]

The Queen Catcher.



1. The wire box to catch the queen, as she passes out of the hive to meet the drones.
2. The wire case to enclose the comb on which the young queen is.
3. The wire tube connecting the box and case.

a. Entrance to the wire case,
b. Entrance to the wire box. On the *cut*, these entrances are not as distinctly indicated under *a* and *b*, as they should have been.

The queen catcher is a *new invention* which I have laid before several experienced beekeepers, who call it "a good and ingenious invention," to catch the queen in natural swarming, when that is allowed.

Some suggest that it will also do for securing the pure fertilization of young queens. This, of course, would require, in some cases, a different arrangement of the cages and tubes, to facilitate the operation.

The queen catcher is composed of a flat wire tube, 20 to 24 inches long, 1½ inches wide; and a wire box 7 inches long, 5 by 5 inches square, both made of fine-wove wire cloth. One end of the tube is inserted in an aperture in the box, made to receive it. Both box and tube are supported upon a frame on a level with the hive, so that the other end of the tube can be introduced into one side of the main entrance of the hive. The remainder of the main entrance is closed by a regulator so that none but the worker bees can pass in and out. Thus arranged, it is ready for swarming, the queen being compelled to pass out into the wire box. The swarm missing the queen returns, and discovering her in the box, clusters on it. The bees are then in a convenient place to handle and hive in the usual way; and we can satisfy ourselves of the presence of the queen in the box.

The box should have an aperture in the top, to let the workers which pass into it escape. It should also have a door, by which the queen can easily be liberated among the bees, when ready, and all is done.

As above suggested, I use this wire box and two tubes, when caging the queen and drones from different hives, at the same time—the tubes passing from each hive into the wire box; one hive containing the queen, and the other the pure drones. The entrance to each hive is to be closed, as in swarming; so that the queen and drones will be compelled to meet in the box. The young queen should never be permitted to pass out on her bridal tour, before the catcher is arranged. On the fifth or sixth day after leaving her cell, is the time she usually passes out to meet the drones, if the weather is favorable.

The choice drones should also be confined to the hive; for if permitted to fly out, black or impure drones may enter the hive with them; and thus the purity sought might not be secured, unless caught in a separate box and the choice drones selected, before caging the queen. If confined more than one hour together, they must be supplied with a sponge saturated with honey, for feed in the box. If the nights are cool, they must also be placed where they can have the heat of the bees to give them the proper warmth. They may require to be kept confined together forty-eight hours. The queen is liberated by turning open the door of the cage, down upon the frames.

When the hives containing the queen and the drones are too far apart to use one catcher as above noted, then of course two will have to be used, and the drones caught in one and then put in the other containing the queen, and arranged and managed as above stated.

I first used a glass box, but by experiment soon found that the wire is preferable, as it excites the queen and drones less; and where the heat of the bees and ventilation are desired, it is again preferable.

By a *union* of the queen catcher and Dr. Preuss' wire comb cage, (see A. B. JOURNAL, volume 4, page 206), we have all that can be desired to secure the pure fertilization of young queens, since it will do away with some of the objections made to the plan above described.

The diagram will at once show how the whole is arranged, when in use. It will be seen that there is no chance for the queen to be lost, when the catcher is once placed in working condition, with the wire tube entering the case and box. She must pass into the box, as she goes out to meet the drones. The wire case encloses the comb on which the young queen is found, upon the fourth day after she leaves the queen cell. If a comb is also encased with choice drones, in the same manner as for securing the queen, we can, by the same arrangement, have the choice drones pass into the same box—there being no chance for the drones to become mixed after being selected and confined in the case. An aperture is made at the lower front corner of the wire case, to receive the wire tube, as it stands in the hive or nucleus box.

JEWEL DAVIS.

CHARLESTON, ILL.

[For the American Bee Journal.]

Justice.

MR. EDITOR:—In your May number Mr. Walter Hewson, of England, among other questions, says:

"The last question, though last is not least, do we not all hold ourselves indebted to Mr. Langstroth? Is he not the Father of modern hives and the Prince of modern Apiarians? A correspondent wrote some time back that we owe him a debt not only of gratitude but of *cash!* Brother beekeepers, if this is so, (and it really *is*), should we not find a pleasure in attempting to liquidate that debt?"

I desire to thank Mr. Hewson for the generous feeling which prompted him to speak thus. I appreciate it all the more, coming as it does, from an entire stranger, and being in such wide contrast with the treatment I have received from many of my own countrymen; some of whom, after profiting largely by my invention, have not scrupled either to withhold as far as possible, any proper acknowledgment of their obligations, or tempted others to use illegally my invention; and others still have for years denounced me as attempting to palm off foreign inventions as my own.

If, however, I should allow Mr. Hewson's question to pass without any comment, I should do the greatest injury to the celebrated Prussian Bee-Master, Dzierzon; who, by his discovery of the parthenogenesis in bees, has thrown a flood of light on points pertaining to their reproduction which puzzled the profound intellect of Aristotle, and eluded the patience and enthusiasm of a Swammerdam, a Reaumur, and a Huber. No true hearted beekeeper can fail to put the laurel crown upon the brow of Dzierzon, and hail him as *facile princeps* (our chief commander) in the strife of thousands of years.

While by this great discovery he has placed himself at the head of all, I may perhaps be pardoned for quoting from your letter, December 24th, 1852, published in the first edition (1853) of my work on the honey bee:

"You may certainly claim equal credit with Dzierzon for originality in observation and discovery in the natural history of the honey bee,* and for success in deducing principles and devising a most valuable system of management from observed facts. But in invention, as far as neatness, compactness, and adaptation of means to ends are concerned, the sturdy German must yield the palm to you."

It is with increasing reluctance that I am compelled so often to obtrude upon the public, my claims and the various ways in which they have been ignored by many beekeepers; but if your readers feel under obligation to me for the invention of a hive which has confessedly given a new impulse to beeculture, I can easily show some of them a way in which they can do me justice. Let them read my article in this number, "Reply to B. C. Auchampaugh's questions about Patent Rights and Claims," also the advertisement of L. L. Langstroth & Son, showing what territory in the extended patent is still controlled by them. If they are using any style of hive clearly covered by my claims, (see page 152 of the 8th number, volume 4, of BEE JOURNAL), no matter of whom they may have purchased the patent, they are using my property for which they have paid me no equivalent. Our advertisement will show them how they can do us justice.

It is true that the larger part of the most valuable territory, has passed out of our hands; belonging now to Mr. R. C. Otis, of Kenosha, Wisconsin, who by his untiring energy has perhaps done more than any other person to introduce the movable frame principle to the public, and who has not yet received any adequate remuneration for the time, money, and energy which, since 1856, he has devoted to this business; but like myself, is a poorer man for all he has done.

L. L. LANGSTROTH.

OXFORD, BUTLER CO., OHIO, June 10, 1869.

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*Mr. Wagner does not seem to have appreciated the value of Dzierzon's discovery of parthenogenesis.

☞Our remark was not meant to embrace *parthenogenesis*—a matter then still controverted by many eminent physiologists. The expression thus happens to be broader than it should have been. At a not much later period, the language would certainly have been so modified as to accord due credit to Dzierzon for his discovery.—ED.

Madame Vicat says, "moths are most ready to attack hives which have swarmed oftener than once; because in them the combs, in which the young queen bees were reared, being empty, serve both for shelter and food to their maggots, which feed only on wax."

Nature has endowed bees with an exquisite sense of smell, for they can scent honey and wax at a great distance.

AMERICAN BEE JOURNAL.

EDITED AND PUBLISHED BY SAMUEL WAGNER, WASHINGTON, D. C.

AT TWO DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

VOL. V. AUGUST, 1869. No. 2.

[From the London "Journal of Horticulture."]

Bees and Bee-Keeping in Egypt.

It may be remembered that, when commencing a series of articles upon "The Egyptian Bee," I stated that the distinguished German apiarian, Herr Vogel had taken charge of the illustrious little strangers, whose involuntary migration into Europe had been made under the auspices of the Berlin Acclimatisation Society. After succeeding to admiration in multiplying and disseminating his interesting protégées, Herr Vogel seems to have been inspired with the desire of making the acquaintance of *Apis fasciata* in its own habitat. This desire he was enabled to gratify during the spring of 1866, and, I have now much pleasure in submiting to the readers of "our Journal" a translation of the very interesting account which he has given of his apiarian observation during his Egyptian trip.—T. W. WOODBURY, DEVONSHIRE BEE-KEEPER, MOUNT RADFORD, EXETER, ENGLAND.

THE EGYPTIAN BEE.

The recluse who never moves outside the four walls of his house, or at the farthest goes not beyond the familiar shade of the trees in his own garden, may well believe that the sun shines not on foreign lands, and that the inhabitants of distant countries must perforce dwell in utter darkness; but the bee-master should at least know from what field and from what flower his bees gather sweet nectar and gaily-tinted pollen, as well as the places from which they fetch water. The reader of our Bee Journal may also if he pleases travel in thought through Germany, Italy, Poland, Russia, and by land to all the countries of Europe—by water to Australia, Asia and Africa; to the lands of the Mohammedan and the heathen, and witness how the little bee is everywhere provided for by the beneficent Creator, and how she is fostered by man.

Let me beg the courteous reader to permit himself to be in thought transported with me through the air and over the blue waters of the Mediterranean to the ancient city of Cairo. But Cairo alone, the unsubdued or rather the invincible, is not, with all her glory and magnificence, sufficient to captivate us, for we are anxious to see the little bee and the Egyptian bee-masters. Hiring donkeys, the driver straightway conducts us to Old Cairo, and to the Arab Soliman, who is grave-digger in the English churchyard. Here, accordingly, we find the old Arab occupied in the God's acre under the shade of the tall trees; but he is not now making a last resting place in the cool ground for any child of man, but is only closing a bee-hive, into which he has just shaken a swarm of his wards. Our dragoman introduces us as European bee-keepers, who have come to sit at the feet of the Egyptian bee-master, and to listen to the teachings of Egyptian wisdom. Alas, it is not permitted to us to read in the eyes of the Arabian bee-master the impression which this representation has made upon him. Soliman certainly wears no yash-mak, like the feminine beauties or ugly ones of his land, but has simply a bee-cap drawn over his head. We express to him our surprise at seeing in Old Cairo a bee-cap exactly similar to those we have met with in Europe, when Soliman at once becomes communicative, and relates as follows:

"In the year 1242[*] the foreigner Hammerschmidt bought of me a stock of bees, which he took to Europe. In the following year Hammerschmidt came again from Berlin, a town of the unbelievers in the cold North, to Cairo, and brought me this cap as a present. The inventor of the bee-cap is Vogel, a bee-keeper in Europe who received my bees. Neither my father, nor my grand-father, nor great-grandfather knew bee caps, and formerly I also continually went amongst my bees without a bee-cap. How proud, then, am I to possess the first bee-cap in the land! How costly is the material of this fabric! The great Prophet, himself, could not have worn worthier or better raiment! The colors of the material, and of this band, are they not excellent and ravishing to the eye, as a rose that is kissed by the first blush of the dawn? Vogel's friend has washed this fabric with pearls of dew in the morning, and dried it in the evening glow of the heavens!"

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[*] Hegira.

We miss hearing the farther praises of the bee-cap whilst making the following note in our diary:—

1. "In the year 1865, the Berlin Acclimatisation Society sent through the photographer, Hammerschmidt a bee-cap, which Vogel had furnished, to the Arab Soliman, in Old Cairo. This cap is the first in Egypt."

We are pleased at the truthfulness of the Arab, who does not extol himself as the inventor of the bee-cap, whilst we pardon his mistake† in ascribing the invention to Vogel.

In order not to weary the reader with the diffuse and pompous speeches of the old Arab, we merely extract the farther notices from our diary, permitting ourselves only to add some explanatory remarks.

2. "The ruler of the bees is slender as a palm tree, the male heavy as a crocodile; the slaves are most like the mother, must work day and night, cleave in love and service to the ruler, and slaughter the males at command. The ruler orders the murder of the males as soon as the flowers are withered in the heat of summer; the males are unable to defend themselves, in that they are stingless. If the males were to remain alive in the summer they would obtain authority; but in the bee community only the mother shall rule."

The Arab also knows three different kinds of bees—the queen, drones and workers. He says that the worker-bees may be so attached to the queen because they owe their existence to her. The egg of the bee is not unknown to the Arab bee-master; he knows that out of it will come a worm, and in time a young bee.

3. "Bees swarm in Old Cairo in the month of March, when the clover begins to flower. At this time the Arab daily lays his ear on his stocks, in order to hear when the old mother-bee begins to 'weep.' When this 'weeping' is heard he counts upon a swarm being pleased to issue the next day. As the queen will then forsake her children and her government to found a new empire, the Arab deems the sounds of lamentation very natural."

We can scarcely understand this mistake in respect of swarms. Soliman firmly maintains that swarms can be looked for only when the rulers "weep" (pipe or clack.) From what we heard, we concluded that the Arab first watches for swarms when a stock has already sent off a prime swarm, and when the young queens in the stock hives pipe and clack. The first prime swarm must therefore certainly fly off, unless he should by accident discover them hanging on a tree. To the question, Whether he did not sometimes have a swarm without the queens having "wept," he answered that then he had either missed hearing the "weeping," or the swarm found was a wild (flown away) one.

4. "The swarms are shaken into empty cylinders. In order that the bees may be pleased with their new dwelling, empty and full honeycombs are set up in it. This can be easily done, as all the cylinder-hives are of equal width. Each comb must be placed on a forked stick, and by means of this may be firmly fixed, if the length of the stick be the same as the diameter of the hive."

It is certain that during the past hundred years the Egyptians have been able to prevent swarming. Soliman is, in this point of his practice, perfectly Dzierzonian, without, however, knowing Dzierzon's name. That the Arab prevents swarming in order to dry the tears of the ruler of the swarm, is, practically, of no importance whatever.

5. "If a stock swarms, notwithstanding that the queen has not yet "wept," the Arab makes an artificial swarm. When the bees have taken flight, he, towards evening, stops the entrance in the front disc of the cylinder, opens the door behind, takes out a portion of the comb with the bees hanging on it, and places it carefully in an empty cylinder. In order not to weaken one stock too much, he takes combs and bees from two or three hives, and forms his artificial swarm by putting them all together. When the back door is again closed, the front entrance is opened, so as to receive into the parent stock, instead of into the artificial swarm, those bees which have collected during the removal of the combs. The Arab thinks that he has then a queen in the new stock, and that otherwise the operation fails. 'When,' says Soliman, 'I do not divide and remove the bees at the right time, the young bees kill their old mother, and cast her dead body out of the hive.'"

Our friend Soliman also understands dividing and transporting. He only divides those stocks that have young queens which pipe and clack. He always takes care that he has a young queen in the artificial swarm, because after a queen has been hatched the divided swarm would not have suitable brood for raising a queen, as when a stock pipes and clacks after the first swarm has issued all the brood is already sealed over. That artificial swarms may be made with brood only, passes the comprehension of the Arab, and thinking is not his métier. I doubt not that to this day there are old boys in Germany that know no more of the manner in which a queen is produced than Soliman himself. Some years since a bee-keeper died in this neighborhood, who never could thoroughly comprehend that it was possible for the bees to raise a queen out of an ordinary worker egg or larvæ. In order to demonstrate the matter to him *ad instantium* and *ad oculos*, I made on my own stand, and before his eyes, an artificial swarm, by means of brood comb. Every comb did he most rigidly examine, and finally declared it certain that no royal cells were there. Eight days afterwards I took this opposer of the march of intellect to the artificial swarm, lifted out the combs, and showed him five adhering royal cells. "Yes," he admitted, "those are queen cells." I detained the old man in order to convince him, and described the manner in which a queen-bee was reared. During my discourse he shook his head, as I fondly thought, in wonder at the marvellous instinct of the bee; but some days afterwards I heard that this incredulous and mistrustful blockhead thus expressed himself:—"Why, this blunderer would make me believe something. He puts royal cells into the hive behind my back, and would then persuade me that the queenless bees had built them." *Roma locuta, res finita,* thought I. Our bee-colleague Soliman could, indeed, hardly have expressed himself worse.

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†*Errare humanum est.*

The Arab holds the erroneous opinion that at the time of swarming there are several queens in one and the same hive; and that if the stock does not swarm, or he does not divide it, the old mother is always killed by the young queens.

6. "In the middle of summer (August) when the Nile rises and overflows its banks, the Egyptian bee-master cuts out the honeycombs. Whilst this is being done the entrance is stopped, and the disc at the back of the hive being removed, the bees are driven towards the front by means of smoke. A knife having been used to loosen them at the top, perhaps three-fifths of the honey-laden circular-shaped combs are taken out. Combs containing brood-cells are not meddled with; and if at any time the Arab by mistake takes out a comb containing eggs, larvæ, or sealed brood, he immediately returns it again. The destruction of bees by sulphur is unknown."

In Egypt they also follow the swarming and depriving‡ system. To destroy brood is there held as a sin. What, indeed, would Soliman call those German bee-keepers who teach that at the time of the blooming of the willow (the end of March or beginning of April) one should cut out of the stocks all empty and brood-combs up to the sealed honey at the top? Verily all that they do in strange lands and distant parts of the earth is not so much amiss.

7. "Soliman is truly a great smoker, yet he never employs tobacco in his operations, but smokes bees only with dried cowdung."

I have before stated that the Egyptian bee stings only when irritated, and I now repeat the same, in order to avoid mistakes; but on the other hand, if irritated it is extremely vicious.

I at first operated on the imported colony without smoke; and as I was neither stung nor otherwise molested by the bees, I could then with truth assert that the Egyptian bee did not sting. About four weeks afterwards I made use of cigar-smoke when withdrawing an Egyptian brood-comb in order to remove it. I forthwith received eleven stings in the face and five in the hands. The other day I purposely operated with tobacco smoke, and, having on no bee-cap, was compelled to run away. All recent observations go to prove that tobacco smoke excites the greatest wrath in the Egyptian bee. With the German and Italian bees the human breath produces the same effect. If the ire of an Egyptian stock is once excited, it remains for a long time extremely vicious, and when it has at last calmed down, we need use but a few whiffs of tobacco smoke to see the rage of the little insect break out again in all its full fury. We can understand with what spirit the Egyptian bee sets upon people, when we consider the extraordinary agility and vivacity of the insect. In order to subdue its irritation, I use the smoke of decayed willow wood, (touchwood,) and this converts its courage into embarrassment, despondency, and dread. They will even then fly at the operator, circle around him like mad, and pitch on his face, hands, &c., curving themselves at the same time as if they would sting, but mostly fly off again without having done so. I have not yet tried upon the Egyptians the effect of smoke from dried cowdung

8. "The Egyptian-cylinder hives are four feet long* and are made of a compost of Nile mud and cowdung. The Arab makes a mould of reeds, round which he plasters the well-kneaded material to the thickness of about 3 inches. When the cylinder which is thus formed becomes dry, the reedwork is withdrawn. Straw hives are unknown in any part of Egypt. In Upper Egypt, in addition to these cylinders, they also use as bee-hives movable pots and pans formed of the same material. Stray swarms are frequently discovered on the ground, when, if the finder has not the courage to hive them, and the swarms be on his own land, he takes Nile mud, mixed with cowdung, and builds a little hut in the form of an oven, closing up the hole which he has left, by means of a door formed of the same material."

Travelers tell us not unfrequently of bee-hives which they have seen in Egypt. So, for example, De Maillet in his *Description de l'Egypte* speaks of "hives," "bee-hives," and "honey-hives." Among the Egyptian "bee-hives" they have not, up to the present time, contrived straw hives, but only cylinders, pots, &c., formed of Nile mud. There is positively no reason whatever for supposing that the ancient Egyptians used straw hives, since straw is, on account of its retention of heat, a most unfit material for bee-hives in this country.

9. "The Egyptians place their bee-hives as near as possible to the clover fields. In the immediate neighborhood of the cylinder-hives, which are piled up like drain-pipes, is erected a dwelling for the bee-watchman."

Bees collect the most honey from clover. The clover which is so abundantly cultivated in Egypt, Trifolium alexandrinum, should also be cultivated by the Berlin Acclimatisation Society in the experimental fields in Berlin, where, through sowing the original seed, they had such a brilliant result in the year 1862. The plant is an annual, and the seed raised, even on good soil, in this locality, is wanting in the vigor necessary to produce the superior clover which we find in its native country. To import seed annually would, with the high cost of transport and the doubtfulness of the supply, be doubly disadvantageous.

10. "Travelling with bee-stocks is no longer seen in Egypt."

According to various accounts, the ancient Egyptians practiced a profitable system of migratory bee-keeping. De Maillet related (1740), that they then still made use of the Nile in order to obtain a rich honey harvest. "In Egypt they have preserved a custom, introduced by the ancients, of maintaining bees in a very peculiar manner. Sainfoin is first sown towards the end of October, when the Nile, subsides. As Upper Egypt is hotter than Lower Egypt, and the inundation sooner disappears, the sainfoin there grows and flowers earlier. They, therefore, send their bee-hives from Lower Egypt to the south, in order that the bees may gather from the flowers. The bee-hives are all numbered and piled in a pyramidal form on Nile boats. The bees pasture for some days in the fields, and when it is believed that the chief harvest is over, the boat moves two or three miles northwards, and halts again so long as the bees can profitably remain. At last, in the beginning of February, the boatman returns to the sea and restores the stocks to their owners." Niebuhr also describes migratory bee-keeping in Nile boats. From verbal information imparted to Dr. Gerstacker, we learn that neither Ehrenberg nor Dr. Hartmann observed during their travels the transportation of bee-hives on the Nile. Hammerschmidt's careful inquiries in the year 1865 have established the fact, that at present migratory bee-keeping is not pursued in Egypt. All modern accounts, therefore, which represent migratory bee-keeping as being still customary in that country, are, of course, unfounded.

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‡This deprivation is effected by cutting combs out of the hives.—A Devonshire Bee-keeper.

*About 3 feet 10 inches English measure.

11. "The worst enemy which the bees have in Egypt is a long slender wasp, or humble-bee, with a red body. In the latter part of the summer this insect sets itself before the entrance of the hive and kills every bee that comes out. At this season, therefore, a child is stationed in front of the hives with a large fan to drive away the wasps. In the year 1865 the Arab Soliman had in a short time no less than eighteen out of a hundred stocks so completely plundered that they died, and all through the carelessness of the child to whom the watch was entrusted."

What Egpytain insect may be meant by the red-bodied wasp, or humble bee, I am unable to learn. I hope, however, that those naturalists who are among the readers of our Bee Journal will be able to determine its name from this insufficient description,

12. "W. Hammerschmidt, the photographer, had promised me a photopraph of the Arab Soliman, undoubtedly the greatest Egyptian apiarian. At my request, also, Soliman declared that he would gladily permit himself to be photographed; but he soon changed his mind. Even the most civilised Arab cannot understand the nature of the photograph, and therefore views the art as the work of the devil, terrifying accordingly to the ordinary Bedouins and Fallaheen. Friend Soliman very soon began to allege all manner of excuse, such as that he suffered from rheumatism, and was unable to go when Herr Hammerschmidt invited him to accompany him and have his likeness taken; so that all I obtained from the old Soliman was an exchange of compliments."

The reader may, perhaps, be enabled from the information which I have set before him to picture to himself Egyptian bee-keeping. I am indebted for this information almost entirely to Herr Hammerschmidt, who has passed nearly a generation in Egypt, and is a perfect master of the Arabian language, so that an understanding with the Arab became easy. Herr Hammerschmidt obtained answers to a number of questions which I had written, and noted them down immediately. In order not to pervert the sense of Herr Hammerschmidt's memoranda, I have transcribed them almost literally.

We have been far away from home, and right glad are we to be safe back again with wife and child. We intend next to make an excursion to Greece, in order to report upon the bee-keeping in the convent Cæsarea, one league from Athens, on the front spur of the Hymettus.—W. Vogel.

[For the American Bee Journal.]

Fertile Worker-Bees; or, Undeveloped Females.

I have tried a great number of experiments with fertile worker-bees during the last five years, and have destroyed or permanently injured a number of stocks in making them have fertile workers in the hive. I have examined hundreds of combs in these stocks, in the hope of detecting the worker-bee in the very act of laying eggs; and I may say that I have examined nearly every bee in those stocks that contained fertile workers, but never could fix on the bee that I could positively say laid the eggs.

But, as in most things, with perseverance I at last accomplished the task I had set myself. For on the 26th day of August, 1866, at 7 A. M. I quietly removed the crown-board off a stock that contained fertile workers, and quietly lifted out one of the centre combs and saw a worker-bee in the very act of laying an egg. (No person that ever saw a queen laying eggs could be mistaken in this act.) The bee had its abdomen down in the cell, the comb around her being clear, and was surrounded by the bees exactly as a fertile queen is found when in the act of ovipositing.

My lifting out the comb did not appear to disturb this bee more than it has a fertile queen when I have lifted out a comb, several of which have laid eggs whilst I have had the comb in my hands. I waited until this fertile worker had finished laying the egg, and as she was withdrawing her abdomen out of the cell, I caught her and put her into a small queen box, I removed the comb, which contained worker cells only, and examined this egg which I saw the worker-bee laying; but in appearance there was little or no difference between it and an egg laid by a fertile queen. In some of the cells there were from one to ten eggs in one cell, and drone brood in all stages of developement, some of them hatched out as small drones.

The sealed brood had a very singular appearance, with here and there a conical cover, the brood not being in a mass as when laid by a fertile queen. In some cases two of the eggs were hatched in the same cell, the bees enlarging the entrance to the cell to the size of two cells, and then covering the two larvæ with one large conical cover; and I have seen them afterwards emerge from their cradle perfect drones. This is the first account I ever heard of two bees coming to maturity in the same cell.

The fertile worker bee presented all the characteristics of a common bee, except the abdomen, which was a little more distended. Upon carefully dissecting the bee, I found that her ovaries contained eggs, some of which had come to maturity; but nothing like the quantity of eggs found in the ovaries of a fertile queen.

I believe this is the first fertile worker-bee that has ever been actually caught in the very act of laying eggs, since the days of the king of bee-masters—the illustrious *Huber*.*

Fertile workers are more common than most bee-masters are aware of, and the young drones they produce are often thought to be the progeny of drone breeding queens. "A Bee-master" who has written a series of articles in the "*Scottish Gardener*," offered in that paper to give £10 for any fertile bees or their eggs. I told him if he would expend ten pence, to carry him from his house to my apiary and back, I would show him a hive with hundreds of eggs laid by fertile workers. I suppose he was convinced there were such things as fertile workers, as he never came to see them.

WILLIAM CARR.

NEWTON HEATH,
NEAR MANCHESTER, ENG.

Exhibition of Bees.

From the account given in the "*Manchester Guardian*" of the National Horticultural Exhibition at Old Trafford (England), in May, we copy the following paragraph, showing that the bees, their work, and their accommodations, occupied a prominent position on that occasion. A sight so novel to most of the spectators and so interesting and instructive to all, cannot have failed to make a strong and lasting impression in favor of bee-culture there.

BEES AT WORK IN THE BOTANICAL GARDENS.—One of the most interesting sights in the exhibition is two stocks of those beautiful and superior honey bees, the Ligurian or Italian Alp bees, at work. These are exhibited by Mr. William Carr, of Clayton Bridge, Newton Heath, in one of his "improved humane-observatory revolving bar-frame beehives," the four sides and the top of which are composed of layers of glass. The bees and combs in the hive are always in view. There is a thermometer inside the hive, and Mr. Carr states, from observations that he has taken three times each day for several years, that it is the warmest hive in winter that he has tried. There about 25,000 bees in this hive. The other stock of Ligurian bees are in Mr. Carr's "improved unicomb-observatory revolving bar-frame bee-hive," which, for scientific purposes, is one of the most wonderful hives ever invented, as all the mysteries of the hive are exposed to view. And it is most interesting to see the queen laying her eggs in the cells, surrounded by her maids of honour, who are constantly paying her some attention; at one time feeding her, then dressing or smoothing her hairs, crossing their antennæ, as if in conversation, or communicating to one another by their sensitive touch, and then moving out of the queen's way as she walks in royal dignity over the combs in search of empty cells in which to deposit her eggs; and, like the Court of our own Queen, her subjects retire backwards, with their faces turned to her majesty. Mr. Carr states that a fertile Ligurian queen will lay from 100,000 to 200,050 eggs in a year, and that one impregnation fructifies more than half a million of eggs. In this unicomb hive the eggs and brood can be seen in the cells, and the young bees biting the cover of their cradle away, and emerging into life perfect bees. The bees that have been abroad collecting can be seen unloading the pollen from the basket in their thighs, and depositing the honey in the cells. In fact all the hidden wonders of the interior of a beehive are here revealed at a glance. Mr. Carr also exhibits a bell glass filled with from thirty to forty pounds of very splendid honeycombs. It was collected at Clayton Bridge principally from white clover, by the superior and beautiful bees, the Ligurians. He also exhibits improved bar frames, filled with beautiful honeycombs, weighing from six to seven pounds each. Any comb can be taken out of these improved humane bar-frame hives, and placed on the breakfast or tea table in less than five minutes, at any time of the day, without killing a single bee. Mr. Carr has had a great number of prizes awarded to him for the exhibition of his bees at work, and he exhibits a large silver medal awarded to him at the Manchester and Liverpool Agricultural Society's centenary celebration in 1867.

The enormous quantities of honey produced may be comparatively estimated by the collateral production of beeswax, which it exceeds by at least ten to one. When we reflect upon what masses of the latter are consumed in the rites of the Roman Catholic and Greek churches throughout the many and large countries where those religions prevail, we shall be able to form a general estimate of the extensiveness and universality of the cultivation of bees. Nor are these the only uses to which wax is applied, and the collective computation of its consumption will show that bees abound in numbers almost transcending belief.

The only instance of the occurrence of the very distinct genera of *Apis* and *Mellipona*, both honey-storing genera, yet known to exist indigenously in the same locality, is found in the island of Java.

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* ☞The Baron of Berlepsch, and his assistant Gunther, repeatedly caught fertile workers in the act of laying eggs; and Prof. Luckert, in May, 1855, dissected several which the Baron sent to him preserved in spirits of wine. But the fact that two larvæ were sealed up in one cell, with one large conical cover, and came to maturity, is we believe an observation not made before.

[For the American Bee Journal.]

How Thorns Grow in Beeland.

On reading the article on page 48 of the September number of the BEE JOURNAL, stating that Osmond Patton died from the effect of a bee sting, I thought it my duty to give a truthful account of what happened to me, last summer, with a distant neighbor of mine. Though the fact I am going to relate has nothing to do directly with practical bee-culture, yet it may save some a good deal of trouble, keep them perhaps from sleepless nights and apprehensions of dreadful vengeance; and at the same time serve as a warning against intemperance, carelessness and superstition.

As with me, so I am aware it is with nearly every bee-keeper, who has a large apiary. Farms on which bees are kept, are more frequented by visitors and seekers than others. If not thus with all, it is so however with me in the bee season. Then, especially on Sundays, a neighbor or some stranger strolls along the fences, with slow and measured step, looking up and down through garden and orchard, till he arrives in fair sight of the apiary. Here his steps slacken, and he finally stops, apparently counting the bees and hives. Then, slowly moving onward again, he at length disappears as suddenly as he came. This may be seen every summer, wherever a public road passes within view of an apiary.

A man, living some miles away, made such approaches to my apiary, several times, when passing along on his way to church, or on other business. One Sunday, returning from Mass, about two o'clock in the afternoon, he made his appearance again, in his habitual slow pace, gazing intently over the fence, his face beaming with delight. On seeing me near an apple tree, where I was examining some damage done by mischievous boys the previous winter, he crossed the fence, and gesticulated towards the apiary. Being myself extremely deaf, I heard nothing, but judged from his actions that the man was greatly astonished at seeing so many bees—more perhaps than he had ever seen before. Pleased to see him thus interested, I went to him and asked if he was a lover of bees. "No," said he, "I have never seen honey bees in an apiary; but I have heard a great deal of talk about them, and therefore stepped over to ask your permission to have a look at them." "Well, friend," I replied, "you shall not only see my apiary, but the hives also inside and outside, and morever taste the sweetness of the honey-comb this very day." Together we walked till we reached the apiary—which is a bee-house two stories high, covered with a shingle roof, and enclosed all around with boards, with a door for entrance. The hives were placed close together, and we stood in front in full range of the bees' flight. As my man was in profuse perspiration, after his four miles walk from church, I told him it was not a safe place for us. The bees were flying splendidly; it was just two o'clock, the weather was very sultry, the young were exercising in great numbers, and the man stood at full height among them. Fearing he might be stung, I asked him to go into the bee-house. But seeing me disregard the bees and expose myself so fearlessly, he concluded the bees are merely flies, and declined seeking shelter. "No," said he, "I was once stung in my thumb by a humble-bee, it was nothing more than a flea bite, big bee though it was." "Well, then," said I, "be attentive, I am going to turn over one of the hives that you may see its interior. Be careful not to make any sudden movement which may irritate the bees, though mine are gentle." In a moment I had the hive turned over with the opening or mouth towards him. The man prattled and looked on to his heart's content, examining both bees and combs closely, and constantly approaching nearer and nearer, till suddenly he made a fearful leap, uttered a piercing shriek, and rushed away with quite a stream of bees in pursuit. In an instant he was seen no more, but the bees whirled all around in wild excitement. I was soon stung twice, and returning the hive to its position, marched off very demurely out of harm's way. Having reached a safe distance, I looked up for my man. He was seen whirling his arms wildly, jumping and rushing frantically through threshing-floor, on his way to the woods. I called to him to stop and I would assist to free him from his tormentors; but he seemed as deaf as myself, and mad with excitement and pain, soon disappeared in the woods. Thus far the story is a natural one, and the like occurrence may have happened frequently elsewhere.

Three days after, having heard nothing of him, and feeling uneasy on his account, though he was a stranger to me and an Irishman, I could not refrain from making inquiry about him. So I went to a friend who lived not far from the Irishman's farm. I reached there about four o'clock in the afternoon, and at once stated my errand, relating what had taken place on the previous Sunday at my apiary. My friend said he knew it already, and then related to me the version of the story as given by the other side, which was very different from mine. We concluded to go together to the man's farm, and explain how the affair happened. I could not account for the mishap, except by supposing that as his mouth was close to the bees he had blown his breath among them, and the effect would be the worse if the man had just previously drank whisky or other ardent spirits. The object of our visit was to inform him where the fault probably lay; but the man was not at home on our arrival, having just gone to fetch his cows from pasture. On entering the house, my friend made some apologizing remarks about the behavior of the bees on Sunday. In an instant the wife rose like a fury, screaming at the top of her voice, foaming with passion, and uttering maledictions with steam-like volubility. She seemed ready and resolved, like a hyena, to tear me to pieces; and, deaf as I am, I was soon aware that something worse than bee-stings was in prospect. I therefore refrained from making any remarks; but my friend finally succeeded in assuring the woman that the trouble arose from her husband's whisky-flavored breath being blown among the bees. This seemed to calm her somewhat, though she would not give up the quarrel. On a hint from my friend we left the premises, and I accompanied him to his home, where he related to me the account of the affair given by the other party, as follows:

It seems that the man, on leaving my bee-house with a rush, knocked off his hat, which rolled nearly under the hive. Seizing it in hot haste, he leaped and run in bewildered excitement, thinking perhaps that half the colony of bees were after him. He was stung seven times—once just below his left eye, four times under the hair of his head, once on the right cheek, and once on the neck. This was nearly enough to make him hot on such a warm summer's day. It was the first time in his life that the man had a conflict with a bee-hive. He leaped and ran till he was about forty rods from me in the woods. When there he felt another keen burning sensation in his right side, as though a whole handful of bees were stinging him at once. Just think of it! Who ever heard of bees setting a man on fire! Yet such was the veritable fact! The man was a confirmed inveterate smoker, and constantly carried friction matches about him. That same Sunday he happened to have them in his vest pocket, and among them some copper cents had found their way, which he had received at a tavern where he drank a glass of whiskey on his return from church. While he was running, and jumping, and striking with his hands, these copper cents ignited the friction matches; these set fire to the cotton lining of his pocket, whence it was communicated to his muslin shirt, in which a hole was burned as large as a man's hand. Luckily it was discovered in time, and he succeeded in putting it out. Thus he reached home exhausted, bewildered, and almost crazy. The first impression of himself and wife was that the bees had been set on him by supernatural powers; for both man and wife are very ignorant and exceedingly superstitious, having full faith in witch-craft and sorcery. In their eyes it was nothing but a hellish, devilish, occult affair, of which the husband had become the sport and the victim.

This occurrence is suggestive. The man's ignorance led him into trouble. Had he known and believed that the human breath is offensive and irritating to bees, he would have been careful to avoid breathing upon them and thus arousing their anger; he could have gratified his curiosity without incurring their displeasure. If he had common prudence and carefulness, he would not have carried friction matches loosely in his pocket, running the risk of a horrid death by fire, as might have been his fate if he had fainted or fallen when in the woods. Again his ignorance and superstition might have led him to seek for revenge in the destruction of my bees. And in such circumstances, might not others, worse tempered and maliciously disposed, proceed, under fancied provocation, to commit arson or murder, impelled to criminal acts by ignorance and gross superstition? Is it not hence the interest of every bee-keeper, to avail himself of every opportunity to guide the inquiring, to instruct the ignorant, to inform the prejudiced, and to enlighten the superstitious?

J. DUFFELER.

BROWN CO., WIS.

[For the American Bee Journal.]

Various Sorts of Matters.

Our friend Puckett seems to take on about as bad as the little girl said her baby did cutting teeth. (See May No B. J., page 216.) Hear him! He says;—"Where did the late swarm get the thin watery honey? Is not an early swarm just as liable to get such honey, if it is secreted in the flowers? Bees do not make honey, &c." (In vol. 3, No. 9, page 172, I gave a short article on the subject of evaporating nectar.) I wish now to give some more of my nonsense, as our friend calls it. He says bees do not make honey; but I am strongly inclined to think they do. We will take maple-sap as an example. When the weather is suitable, the bees in a strong stock, will manufacture or make honey from that, and of the purest kind, though the sap is so thin and watery that, in boiling it down, it takes about sixteen quarts to make one pound of grained sugar, or twelve quarts to make it of the consistency of honey such as bees make of it in the spring. So you perceive that a bee has to gather twelve drops of sap to make one drop of honey. Yet all they gather through the day is consumed in rearing brood, or made into honey through the night; and thin watery nectar is made into honey, by the bees, in the same manner and by the same process. I am aware that some say that if you feed sugar syrup, the bees will deposit it in the cells just as you feed it to them. That is so in the fall, or when the weather is cold. But take that same syrup and reduce it very thin and watery, and the bees will make it into honey, if fed to them in the months of July or August. I am inclined to think that, in the process of evaporation, the bees must necesarily mix a portion of their saliva with it, which prevents it from granulating, to a certain extent.

Here is another question for consideration. While the black bees are storing their watery honey in cool weather, either in summer or fall, the Italians are storing a good quality, gathered from the same source and at the same time.—This good quality of the Italians in all probability had something to do with saving them the past season, whereas the blacks all died in the same apiary.

A great deal depends upon the management of bees, whether they leave thin watery honey or not. We will take, for example, two swarms at the same time, and both of the same size. And, for illustration, we will say that, late in the season, one is put in a hive twelve inches square, with eight frames; and the other is, at the same time, put into a hive of the same dimensions, containing four frames. The first fills the eight frames half way down with comb and honey, and the honey will be thin and watery. The other fills the four frames, from the bottom, with comb and honey, and the honey is of good quality. The one with the four frames will winter in a good depository, have abundance of honey, and not have the dysentery; while the other, with the eight frames, will consume all its honey, have the dysentery, and starve to death before spring. I think you will understand what I mean. It is as necessary to have warmth for evaporating nectar by the bees, as it is to have warmth to develop brood or save all the wax in building comb.

To be a little more plain with friend Puckett, so that he can understand what I mean by my bees "knowing better than to have the dysentery," it is necessary that the bee-master should thoroughly understand his business, and attend to it, and then his bees will not have the dysentery. I was sick this winter and could not attend to my bees, or to the ventilation of the cellar. Some of my stocks commenced breeding very rapidly, and consequently got the dysentery more or less, But as soon as I could I remedied it, by properly ventilating the cellar. Some writers call it a contagious disease, and recommend giving the bees medicine. But I contend that it is not. I have not lost a swarm. All are doing finely. So it appears that Gallup's nonsensical method of managing bees is full as good as some other people's sensible management.

In warm weather, in summer, when the days and nights are both warm, a comparatively small quantity of bees will make a good quality of honey, let the nectar be ever so thin and watery when gathered. You will recollect that last fall was very cool, while the bees were storing the principal quantity of honey, and that too when the bees were greatly reduced in numbers. You will observe that Novice in his reverses says some of his swarms had consumed immense quantities of honey by the first of March. Try again, friend Novice; don't give up the ship!

I have considerable more to say on the subject of dysentery or no dysentery; but, in all probability, our friend Puckett has got enough of Gallup's nonsense for one dose. I shall be pleased if friend Puckett will tell us through the BEE JOURRAL, whether he thinks the maple sugar sap is made into honey by the bees, or does the sap make itself into honey? This is an important question.

Our Mississippi friend, Tomlinson, will perceive that I told him, in the February No., page 154, that my rule would only hold good early in the season, or when the bees were not gathering honey too rapidly. His bees were evidently gathering honey rapidly at the time they were building comb. Then, too, I presume your southern climate is different from ours. A correspondent from Tennessee writes that young early queens invariably lay drone eggs the first season. With us, that is the exception, and not the rule—especially with black bees. We want more southern correspondence for the BEE JOURNAL.

To day my bees are evaporating nectar from rack maple blossoms, and gathering it too.

E GALLUP.

OSAGE, IOWA, MAY 8, 1869.

[For the American Bee Journal.]

Facts for Beekeepers.

A suitable abode for the honey bee, is a hive perfectly air-tight, except at one place, and that should be so that the bee-keeper can enlarge or diminish at will. Bees do not thrive in a hive where there is a current of air passing through it. They stop all holes at the top if they can.

I will have to take my friend Elisha to task a little, as he says in the August number of the BEE JOURNAL, 1868—"there is no use in inflicting another patent hive on the community for the next thousand years. All use what is called the Lanstroth principle; only the form is varied. When they depart from that, they make a move in the wrong direction. "Now if I understand right what our much esteemed friend L. L. Langstroth has patented—and all he has—is, movable comb frames so arranged in the hive or case that they will leave a vacant space all around, between the hive and frames, and between the honey board and frames. This is the main feature of his patent. I hold that all hives that have this space, no matter whether they are shallow or deep, giving free circulation of cold air all around the bees, and striking in between each frame to the clustering bees, do more harm than the shallowness of the hives our friend Elisha speaks of. In early spring, if there come a few days of mild weather, the bees spread out over the combs, the queen depositing eggs in nearly all the cells, and the bees cover them. Then comes a cold snap, or even one cold night, causing the bees to cluster compactly together. All the eggs and larvæ outside of the cluster are chilled, and cleaned out by the bees. And so it goes all through the changeable weather of spring. All hives that have this vacant space, it is almost impossible for bees to breed up in at all in early spring; making them too late for early swarming or to gather honey when it is most plentiful. If such hives have lower and upward ventilation, letting the cool air rush up through the hive and carrying off the animal heat, the bees in them are worthless. Comb frames should fit tight to the side of the hive, to prevent this vacant space. Our friend A. V. Conklin, of this place, has constructed a hive with frames tight fitting, that are as easily handled, taken out, and put back, as any movable comb frames that I have handled.

AARON BENEDICT.

BENNINGTON, OHIO.

The study of natural history requires method as a lodestar to guide through its intricacies, but is one which, pursued simply as a recreation, yields both much amusement and gratifying instruction. It shows us that when we unclasp the book of nature, and whenever we may turn its leaves, every word the syllables of which we strive to spell, is pregnant with fruitfulness of wonderful wisdom, whose profound expression the human intellect is too limited thoroughly to comprehend.

[For the American Bee Journal.]

Bee Pasturage.

The importance of bee pasturage has already been urged through the columns of the JOURNAL, as well as by most of our modern writers on bees; but I do not think it is appreciated as it should be, by the majority of beekeepers. While the war about the form and shape of hives continues, without any prospect of a speedy peace, and the paramount importance of the third yellow band is so strenously insisted on, I fear that the equally important question of where those yellow daughters of Italy are to get the honey to fill those hives, is for the time being overlooked.

With an abundance of bee pasturage, I do do not think that we should ever have a poor year for honey. By an abundance of bee pasturage I mean a succession, commencing early in spring and lasting through the season. And if the supply from natural sources is deficient or fails, it should be provided by introducing and cultivating those honey-producing plants whose blossoms will come in at the proper time to fill up the deficiency. Surely, if bees are worthy of cultivation at all, it would pay to expend a little labor and money in prolonging the season for them—thus rendering them doubly valuable.

Here is the way they talk *bee* down in this country. Last year: "Well, neighbor, how are your bees?" "Well, this has been a bad spring for bees. It has been dry, and cold, and very windy, and the bees could not get about very well; but I tell you they are making a heap of honey!" This year: "Well, neighbor, how are your bees doing this year?" "Well, I don't know, hardly. We have had rain nearly all the time, and it has been a bad season for the bees; but, somehow, they are making lots of honey!" This has been my experience here, for the few years that I have kept bees. Whether wet or cold, hot or dry, our bees have generally yielded us about the same quantity of surplus. It may have been because we expected but little from them, and were satisfied to go to our *old box* hives and remove almost one-third of the contents, leaving the bees to fill them up again at their leisure, and not seeing the inside of them again until the same time the next year. But with the movable combs and the honey-emptying machine, I hope soon to discover whether there be that great difference in the honey harvest of different years, which some assert.

In localities where the honey harvest only lasts two or three weeks, I am not surprised to hear the complaint that a drouth or a wet spell cuts off the supplies. But here we have such an abundance of honey-producing plants, growing in such a variety of locations—some in uplands, some in bottoms, some upon the poorest hillsides, others in thick jungles, that any unfavorable atmospheric condition would not affect them all at the same time, or at least very unequally. Hence we can safely count on a continuous supply of honey here, from very early spring till the middle or last of July. I am disposed to think now that August is our only month of scarcity. Our fall pasturage, I think, is pretty good. My bees, last year, raised a new brood of drones in September.

I have been making a note of bee pasturage in my section this season, and will give you the result, for the benefit of the readers of the BEE JOURNAL. I will only note the principal trees and plants which occur in more or less abundance, and upon which I have seen bees at work in considerable numbers. Many are left out as unimportant; while many others, doubtless, have been overlooked.

RED MAPLE, bloomed January 24; ceased March 15.

The blossom buds of the red maple commenced opening on the 24th of January, at which time I noticed bees carrying in pollen from it. It was in full bloom February 9th, and ceased to bloom March 15th.

The importance of the red maple as a bee plant cannot be over-estimated. We raise our bees on it here for the spring campaign. Coming in at a time when, from our warm winters, the bees have nearly exhausted their supply of honey, it is invaluable; and were it not for it we should have to resort to feeding. It furnishes a supply of natural pollen so early, that I fear I shall be debarred from the pleasure of seeing my bees enjoy a feast of "old rye." It grows in countless numbers along all our branch creeks and river bottoms.

PLUM, bloomed March 12; ceased March 28.

PEACH, bloomed March 16; ceased April 1.

SPICEWOOD, bloomed March 20; ceased April 1.

DOGWOOD, bloomed March 20; ceased May 5.

SUGAR MAPLE, bloomed March 30; ceased April 19.

SASSAFRAS, bloomed March 30; ceased April 20.

PEAR AND CHERRY, bloomed March 30; ceased April 10.

GOOSEBERRY, bloomed March 30; ceased April 20.

The last three are unimportant at present, on account of their scarcity; but we hope the day is not distant when the lovers of good fruit, as well as of bees, will make them more plentiful.

RED BUD, bloomed April 4; ceased April 20.

APPLE, bloomed April 6; ceased April 25.

WILLOW, bloomed April 11; ceased May 8.

The willow is a splendid source of pasturage with us, growing thickly along the banks of creeks in our old fields, and is spreading every year over the marshy places in the creek and river bottoms.

WILD CHERRY, bloomed April 20; ceased April 30.

DEWBERRY, bloomed April 25; ceased May 25.

WHITE CLOVER, bloomed April 29; still blooming.

Three or four years ago, white clover was almost unknown among us. I only know of one or two little patches in an old field. But now, in some of the old clearings on the edge of Forked Deer River bottom, we have as good a stand of it, as perhaps could be found in any pasture in New York or Pennsylvania. It is principally distributed through the agency of cattle and high water; and it can now be found very thick along all of the road sides and banks of streams, and even extending into the thick woods. I have been told recently that the bottoms along Hatchie River are being overgrown with it, in the same way. My bees are now working on it finely, and I hope that it will carry them through July.

Barberry, or Hockberry, bloomed May 1; ceased May 15.

Black Gum, bloomed May 2; ceased May 9.

Blackberries, bloomed May 2; ceased May 30.

These latter grow everywhere in the greatest profusion, and yield the most delicately flavored honey that we have. I am sorry to say that the growth threatens to appropriate a large portion of our soil. The cattle avoid it; the farmers give way to it; Mr. Nig scratches his head and declines a contest; but the bees "go in" with a will. Mr. Editor, I too have a honey-emptying machine of my own construction, and can appreciate the delight of "Novice." From a strong prejudice against beekeeping, my "better half" has been converted into an enthusiastic apiarian. Need I add, that delicious honey, and the aroma from the honey-emptying machine during the blackberry harvest, won her over.

Locust, bloomed May 3: ceased May 20.

Poplar, bloomed May 3; ceased June 5.

West Tennessee is the home of the poplar. Here it attains its greatest size. I know of one tree that is nine feet in diameter. It is a favorite amusement of the little negroes to knock down the blossoms and suck the honey they contain.

Holly, bloomed May 10; ceased May 28.

This is a splendid honey plant, but does not last long. It grows only in the bottoms, along the banks of creeks and rivers. Bees resort to it in great numbers, during the whole period of its blooming.

Persimmon, bloomed May 24; ceased June 10.

Wild Grapes, bloomed May 26; ceased June 30.

The latter is another splendid honey plant with us, not excelled even by the poplar. It is very abundant, growing everywhere. Indeed, it would be a very difficult matter to find a spot in any of the thick woods of West Tennessee, that is not adorned by the rank foliage of the *Vitis Labrusca.*

Catnip, bloomed May 22; ceased June 25.

I have been very favorably impressed with catnip as a bee plant; and think that a little labor expended in its propogation, would be well rewarded. A few bunches set upon the top of some old worn out hill, would soon cover the whole hill-side, as it spreads rapidly.

Muscadine, bloomed June 12; ceased June 15.

Elder, bloomed June 10; ceased July 10.

Chestnut, bloomed June 15; ceased June 27.

Pondweed, bloomed June 23; still blooming.

Sumac, bloomed June 25; still blooming.

Corn Blossoms, bloomed July 5; still blooming.

There are three periods during which I have seen bees carry in pollen more abundantly than at any other time during the year, viz: during the blooming of the red maple, in February; from corn blossoms, in July; and, again, from the golden rod, in October.

Honey Dew. Showers of honey dew fell on the 28th of May, and on the 8th and the 18th of June. I have seen it crystalized on poplar leaves. Chestnut leaves have been glued together with it. It has been very abundant also on the white oak, and on the rough leaves of the hickory. *Too much* of it, this year, to be the production of the insects. What do you say of it, Mr. Editor.*

If you think it will be interesting to the readers of the Bee Journal, I will continue my notes on the bee pasturage of West Tennessee, and report again at the close of the season.

Yours, with bee love,
S. W. Cole.

Andrew Chapel, Tenn., July 10, 1869.

*Our impression, from observations we have had opportunities to make, is that what are called honey dews originate from three different sources, and differ accordingly in quality. That which is most common in the Southern section of the Middle States, is of atmospheric origin; is usually very abundant when it occurs; is eagerly gathered by the bees; and yields a honey scarcely to be distinguished in taste, color, or consistence, from that gathered from the blossoms of plants. It is always serviceable and never injurious to the bees. Another kind, less abundant in quantity and of more rare occurrence, is of vegetable origin, being an exudation on the leaves and in the axillæ of various plants, dependant probably on certain states of the atmosphere. It is darker than the former, somewhat viscid, and of less agreeable taste, though constituting a pretty good article. It is gathered somewhat less eagerly by the bees and is not injurious to them, or is not produced and stored in sufficient quantity to become so. The third kind, usually, when it occurs more abundant than the second, is more restricted in its range. It is the product of aphides, and its production is dependant on states of the atmosphere favoring the rapid multiplication of those insects. As it usually occurs when the nectar of flowers is scarce, it is more freely gathered and stored by the bees. It is an ill-tasted, rather innutritous substance, having a strong tendency to decomposition. When stored in a hive in such quantity as to make it the main dependence of the bees in winter, is apt to produce debility; and dysentery will follow if the bees are long confined by stress of weather.

[For the American Bee Journal.]

Brooding Temperature Again.

There is an article in the March number of the Bee Journal, headed "Brooding Temperature," by J. D. Meador. This is a subject that is but imperfectly understood by a large proportion of beekeepers. Yet it is one of vital importance to all. Let us see if we cannot say something respecting it that will be of some interest.

It has been said that this economising the animal heat, so as to keep up the proper breeding temperature, and also to save all the wax at the same time, is one of Gallup's whims. Well. friends, if you understand the theory, and will put it in practice, you will find that it is one of the best whims you ever obtained from Gallup. To illustrate—let us take two hives to begin with, of exactly the same form and dimensions. The Quinby hive and the hive I use are both of the same form and size, namely twelve inches deep, twelve inches wide, and eighteen inches long, inside measure. The difference is in the arrangement of the frames. Mr. Quinby's go the long way of the hive, while mine go the short way. Now we will use a division board in both hives, and we will have a practical beekeeper to manage both hives. He will soon find out that with the same quantity of bees, and with queens of equal fertility, at the same time and under the same circumstances, the hive first mentioned cannot be managed so as to have every cell occupied with brood, so as to save all the wax; while the other *can* be thus managed. Furthermore, the hive with the small frames can be managed so that double the quantity of workers can be gathering outside; while, in the hive with the large frame, they have to stay at home in order to keep up the necessary heat to develop the brood. In the hive with the large frame the bees are spread out over too large a surface; whereas in the hive with the small frame they are in a more natural and compact form.

After both hives are filled with combs, brood, and bees, there would not be any material difference, except in the working of the hive. But let both hives become reduced in numbers, by bad wintering or any other cause, and then the advantage of the small frames is at once seen. Here is a box of ten by twelve inches square and twenty-four inches high. There was a good swarm put into it last year, and they filled the hive to the bottom; the bees have been well wintered and consumed but little of their stores; the brood comb is at the bottom, but the animal heat is at the top. Now, cut off the top, and bring the size of the hive to twelve inches in depth, and double the quantity of bees can and will go into the fields as gatherers.

Again, we will put an ordinary swarm into a small compact hive—one that you can finally enlarge to the same capacity as the other. The one will make a profitable swarm, while the other does comparatively nothing. The simple reason is this, the one has a large working force to spare; while in the other most of the bees have to stay at home, developing only half the quantity of brood which the former can mature. After the weather becomes warm enough, both night and day, there will not be so marked a difference between them, as there is in cool weather.

In old box hive times, it was a fact well known to practical beekeepers that in a hive twelve inches square, the bees would build their combs the nearest right and send out the earliest swarms—surpassing, in this respect, any other form of hive that we could get up, if the spring was favorable, so that they did not run short of supplies. Yet a hive of that capacity proved too small for *every* season. The hive I use is twelve inches square, with another half hive added to one side. Those are the dimensions. Now recollect that I never said that the hive I use is the best hive in the world, or that it will make honey without bees; but that the hive suits me, and I am perhaps as difficult to please as any other person. At least, before I obtained this hive I tried as many different forms of hives, in all probability, as any person in the United States. I formed an idea of what a hive should do, and until I obtained one that would work up to my standard, I was not satisfied. Should any one wish more surplus room, he can make the cap a ten acre lot, if he chooses. Unless you have a hive that will work on this principle, it is useless to attempt a rapid increase. You will have to wait till late in the season, and in every case make up a strong swarm at the start. But in that case it is always more difficult to control the comb-building with a strong swarm to commence with, than with a weak one. Furthermore, a swarm very strong at the start, will build comb faster than the queen can occupy it; and in such case it is difficult to make all swarms alike for the next season. Occasionally, in some circumstances, a swarm in a large hive becames reduced to a mere handful, and still recuperates; but in the right kind of hive we can always bring up a weak swarm speedily. The best of us occasionally have swarms reduced in numbers before we become aware of it. How often, early in the spring, we wish to strengthen a weak colony by inserting a card of brood from a strong swarm, without injuring the latter. Then, how much easier to handle a small frame than a large one, without danger of breaking the comb. When I am increasing my stocks, I frequently have beekeepers visit me. We walk around among the stocks, and the universal remark is—"how strong and populous your swarms are!" But when I come to open the hives, and show them the nuclei with two, three, or four frames, they cannot comprehend how such small swarms, which from their working, they had supposed were extra populous, could work so strong, until I explain to them the principle of economizing the animal heat. Now, gentlemen, this is not mere theory. It can be demonstrated in twenty-four hours, at any time in the summer. We would take one of those nuclei at night; remove the division board; and move the four combs, bees and all, into the centre of the hive. The following day nearly all the bees stay at home to keep up the necessary temperature; and the queen will cease laying, except in the middle of the cluster. At night again, place them back as before; adjust the division board; and next day they will be ready to go to work again, and you will find the queen can and will deposite eggs wherever there are empty cells. Of course, I mean that this shall be done in common spring weather, and not with the thermometer at 95° in the shade.

I might enlarge on this subject, but it appears to be unnecessary. It is one, nevertheless, that is worthy of careful study and practice by every beekeeper in the land, and in deciding what form of hive you will adopt, this matter should be taken into consideration.

ELISHA GALLUP.

OSAGE, IOWA.

[For the American Bee Journal.]

How My Bees Wintered.

In December last I prepared, in about an hour, twenty-four hives of bees for wintering on their summer stands, in the manner described on page 109, volume 4, B. J., and will briefly report the result.

I examined every colony and every comb, April 15 and 16, transferring all to new and clean hives. Two colonies, both strong in the fall, were dead. One, judging from the large amount of bee-bread in the combs, had failed to rear a queen after swarming; and the other had starved. Both cases the result of want of attention on my part, and not the fault of the system of wintering. Four weak swarms, having only five or six frames of comb each, came through in fine condition. These had received especial care, on account of their weakness—having been covered with a roll of cotton batting, in addition to the carpet or woolen clothing; and are to-day, in consequence of a little stimulative feeding and a full supply of combs from the dead colonies, in as forward a condition as any I have.

I left home on the 16th of April for a month's absence, and on returning, May 16th, found three more colonies dead. An examination showed plainly that they had been robbed. But, again, the four weak colonies had escaped unharmed, and stronger ones had been the victims. Why? Simply because I had again taken better care of the weak ones, by closing the entrances to their hives so that only one or two bees could pass at once, and had left the others open three or four inches, thinking them strong enough to defend themselves against robbers. Not one of these five colonies would have been lost, if I could have been at home to attend to them at the right time. Five minutes labor would have saved them all. A fertile queen, or a comb of brood from which to raise one, for the first; one or two frames of honey for the second; and some small blocks to reduce the entrances of the last three, would have been sufficient. Not a comb of all the three hundred was mouldy or soiled; and every colony but the one that starved (containing that remarkably prolific and beautiful hybrid queen,) had plenty of honey remaining, April 16th, to carry them through.

My bees flew freely, voiding fæces January 6th and February 9th, and perhaps at other times in my absence from home—an advantage that bees housed in winter quarters could not enjoy. Repeated examinations during the whole winter, showed the bees in all the hives lying up on the top of the frames, against the warm woolen covering. On the whole I like the plan well enough to employ it again next winter.

My large double glass hive cast a fine swarm to-day, leaving a strong colony in the old hive; while some of my neighbors' bees, in box hives, are on the point of starvation—owing to the scarcity of spring forage in this vicinity. How can this be so? Answer: *I* feed my bees when they need food; *they* do not, on the ground that "bees ought to support themselves." I fed twenty-five pounds of sugar made into syrup to twenty colonies yesterday, in less than four hours time. How? Take off the honey board, lay a frame of empty comb (drone comb is best, though any will answer,) on the top of the frames; pour on the syrup freely, a pint at a time; when the twenty are supplied, it will be about time to go round again. But the bees are all on the combs, and in the way. Never mind, pour it on—it runs off the bees like water off a duck. I got the idea from Mr. Langstroth, who says, and I agree with him, that "honey comb is the best possible bee-feeder."

R. BICKFORD.

SENECA FALLS, N. Y., June 12, 1869.

[For the American Bee Journal.]

The Paper Hive and its Inventor.

As Charles Hastings has introduced "Cox's Paper Hive" to the readers of the BEE JOURNAL, we choose to add our little knowledge of said hive and its patentee and vender.

One year ago, the last days of March, said E. Cox made his appearance in our town. His purpose in visiting the place, as per his own statement, was not to sell the right to use his hive, or territory under his patent; but simply to avail himself of the opportunity, means, and talent *here afforded* to test his "new theory of the fungus growth of the honey comb," treated of by J. M. Marvin, in the April number of the BEE JOURNAL, under the heading of "a new and curious theory." Yet, after gathering all the looked-for information on this point that he could, he tarried here week after week—the attractions of our "romantic place" chain-like bound him, until realizing a few hundred dollars on sale of territory, he found it in his heart to bid adieu to our town's many attractions.

In Cox's own words his hive was destined to perfectly revolutionize beekeeping. So perfectly adapted was it to the nature and wants of the bee, that, as it became known, no other hive could stand before it, or with it. Of necessity it would supersede *all other hives.* Bees would go on breeding all winter. He put a swarm in it in November of the fall previous, in the town of Ripon, where he was then living; and said swarm had gone on breeding all winter, and in March, prior to his visiting our town, had thrown off a swarm of "about" two quarts of bees, and had left in the hive "about" seven quarts.

The brood chamber of his said hive was just a *cubit* foot. The hive, too, is *moth-proof*, made so by two pieces of tin nailed each side of the entrance. *Robber-proof* also, as the entrance is through the bottom board directly into the bee chamber. Two entrances, one on a side, through which a good swarm of bees would walk in and out up to three hundred per minute. At Rochester, Minnesota, during the season of 1867, *four hundred swarms*, in his hive, had averaged *seventy-five* pounds of surplus honey in boxes. Who, at Rochester, can give us the facts on this point?

As to said hive's practical working hereabout, out of at least *seventy-five* swarms put in last season, not ten are surviving at this date; not so large a percentage having failed of all the other hives in the country. Through promise of "great yield of honey and increase of bees," I was induced to let said Cox pick a stock from among fifty, to put in his hive, as an experimental swarm, to be taken charge of by another, for which I was to be insured at least thirty-five pounds of box honey in the fall, with an additional prime swarm of bees, as my share of the products. Said honey I have not seen, and the stocks of bees have gone the way of all flesh.

Cox's "movable top bars of *a peculiar shape*," and the "thin sharp lance," have had their day with me. The turning from the use of movable comb frames, to the use of bars and lance, is a step backward in bee-culture; and if Hastings has not advanced to the use of movable comb frames, ere his present season's experience with Cox's hive, bars, and lance is finished, he will probably rue the day that he ever made acquaintance with them, or their vender either. One claim of Cox for his hive, overlooked, is certainly worth mentioning. It is, that *black bees*, in it, will do *equally well* with the Italians!

Z. C. FAIRBANKS.

APPLETON, WIS., June 12, 1869.

Spanish Broom. (Cytisus albus.)

By a calculation, which one may justly enough make, on the bees' labors, one may conclude that an acre of Spanish broom will yield honey and wax enough for ten good stocks of bees; for this broom brings a vast quantity of flowers fertile, both in wax and in honey, and continues blooming a long time. And when a stock of bees have flowers to their liking, of which this is one of the chief, and have a large quantity of them, they will fill their hive both with wax and honey, in five or six weeks, if the weather permit them to go abroad. The common broom is in no way comparable to the Spanish broom, either for its flowers or its withs.—BRADLEY.

[For the American Bee Journal.]

Natural Ventilation.

In the BEE JOURNAL, volume 4, number 10, page 183, in an article headed "*Upward Ventilation*," by Mr. Miner, he hits us upward ventilation men, and says that we have not the manliness to admit his theory.

A number of years ago, when I lived in Canada, we had what I call a hard winter. The thermometer, for sixty days in succession was not above 10° below zero, and for eight of those days the mercury was frozen. The following spring all the wild bees in hollow trees were found to be dead, *except those with abundant ventilation at the top of the cavity or hollow.* And in fact so, likewise, did all the tame bees die, *unless they had upward ventilation.* I found three hollow trees in the spring, with abundance of bottom ventilation, and the bees were all dead. There was plenty of honey, and one of them had over one hundred pounds. I found them by following my own bees to the trees, as they were taking away the honey. I also found one extra good swarm, with the bees all alive. The entrance was *at the top of the cavity.* The hole was round, and about four inches in diameter. I lost some swarms in Weeks' Vermont hives, with abundance of downward ventilation; but my box hives and old conical straw hive, with a two-inch hole at the top and the bottoms plastered up tight, wintered in excellent condition. A neighbor wintered eight swarms in box hives, with a two-inch hole in the top of each. They set on the top of hemlock stumps, without any protection whatever; and were in the best condition in the spring.

That bees will winter in Illinois, without upward ventilation, I do not in the least doubt; and that they will winter with upward ventilation is also a positive fact. With upward ventilation, and all downward ventilation stopped, there is no circulation of air, only as the bees themselves cause it; and they cause the circulation just as they require it, and no more. It is a well known fact, (at least to me), that bees will be just as prosperous in a hollow tree, in summer, with the entrance at the top of the cavity, as they will be with the entrance at the bottom; and this rule holds just as good with the common box hives. But bees frequently go into a hollow tree with both upward and downward ventilation. In that case, in a cold winter, they invariably perish. If Infinite Goodness has furnished the bee with a home adapted to its needs, as Mr. Miner says, a great many swarms, according to my experience, are very foolish in making their selection.

I am well satisfied that bees would succeed in Illinois, with upward ventilation, or with horizontal ventilation; but in Lower Canada, upward ventilation in the hollow tree, is the rule for success.

Here, in this climate, I have found it poor policy to have bees commence breeding earlier than the first of March; and, in some seasons, not before the 15th. Swarms that commence breeding early in February, are no further advanced on the 20th of May, than those of the same strength in numbers that do not commence breeding until the first of March. Then those that commenced breeding earliest, have consumed much more honey without a corresponding benefit.

In a dry airy cellar, such as Mr. Thomas speaks of in the June number of the BEE JOURNAL, bees can be wintered without upward ventilation. I know that to be a fact by actual experience. Yet, with proper upward ventilation they will winter just as well. But in a damp or moist cellar, or a cave, it is impossible to winter them in good condition, without upward ventilation. And a large majority of us farmers have to use just such cellars as we happen to have, especially in this new country.

The AMERICAN BEE JOURNAL is a National Institution. It is not especially for your locality, neither is it for mine. Therefore do not knock us all down with your arguments, without as much as giving us a chance to defend ourselves. There are quite a number of subscribers (and there ought to be many more) in Canada, even further north than where I was born.

ELISHA GALLUP.

OSAGE, IOWA.

[From the Southern Planter and Farmer.]

Alsike Clover for Bee Pasturage.

Early in the year 1868, I was induced by an article I saw in the "BEE JOURNAL," to try the alsike clover for my bees. I accordingly purchased a pound of the seed, which I sowed upon a small piece of land (about a quarter of an acre,) though too much seed for the quantity of land. It germinated well, and, like the red clover, only made a good stand. But this spring (1869) it came up well, and now, the 16th of June, it will stand, if erect, twenty to thirty inches high, and is covered with blossoms and bees. Indeed, I have rarely seen bees more numerous on buckwheat blooms, than on this clover. I shall sow a lot of buckwheat for fall pasturage; but for May and June, I think the alsike clover furnishes more food than any plant I have ever seen. When not too cool or rainy for them to be out, you will find the patch covered with bees pretty well all day, and at times almost in swarms. They have sent forth a goodly number of swarms, and filled the bodies of the hives well with store honey; and I hope will yield a good surplus. I shall sow this fall another lot much larger than the one I now have, reserving that till the other is sufficiently advanced to afford them food; and as long as I am able to procure seed to sow, shall do so to keep up a succession. Besides, it yields an abundant crop of hay; not so much as the red clover, but the sweets furnished to the bees more than make up any difference. The bloom is like that of the white clover, folding back in such a way as to enable the bees to get into every part of it; while on the red clover, coming up in the same patch, you never see one. M. G F.

HENRICO CO., VA.

[For the American Bee Journal.]

Honor to Whom Honor is Due.

MR. EDITOR:—After Columbus had crossed the pathless ocean, discovered and made known the existence of another continent, and proved to the world that progression was the universal order of things, it was easy enough to follow where he had led, and to assume to wear the laurels which he had won. So in BEE-CULTURE. Years ago, when apiculture as a science was in swaddling clothes, there was published a book called "Langstroth on the Hive and Honey Bee." This book purported to give a new system of bee-culture, and recommended a new form of hive. Of course, at first, a great hue and cry was raised against it, but "truth is mighty and must prevail." Soon matters changed, and the same parties who cried out against the principles laid down in that book, began to appropriate them, and that too in a manner not at all creditable to them, as honest conscientious individuals. At first perhaps this order of things was not as culpable as it might have been; for many persons ignorant of the claims set forth in the Langstroth patent, were violating it innocently. But *now*, it seems to me that no one can appropriate surreptitiously any of Mr. Langstroth's claims, without incurring the guilt of gross fraud.

It is easy enough to write a book on bee-culture, when Mr. Langstroth's able work is at hand to plagiarise from; and it is easy enough to get up a movable comb hive, when Langstroth's patent is at hand to build by; but is it honest? is it just? Do we not all owe a debt of gratitude to Mr. Langstroth, which should lead us not only not to steal his improvements, but when we *legitimately* use them, give him full credit for them? In all the different styles of hives that I have seen advertised in the BEE JOURNAL and elsewhere, I find them simply modifications of the Langstroth hive; and still I find but one man among them all, who comes out and gives the credit due to that hive, (I refer to H. A. King & Co.'s invention of the American hive,) and not only do they steal his invention or parts thereof; but some of the writers steal his written ideas, and publish them bodily in the BEE JOURNAL and elsewhere, without even so much as saying, by your leave. Mr. Alley, of Wenham, is perhaps an exception to the above, as he in his new hive, (unpatented), gives Mr. Langstroth full credit. In fact, he calls it a Langstroth hive. I have seen his hive in practical use, and for surplus honey I think it has no superior. It fully demonstrates the fact that bees will work in side boxes, and while its form is such that it can easily be manipulated, it is open to no objection that can be urged against its wintering out of doors. In fact I deem it a model hive for surplus honey, and would recommend bee-keepers generally to try it.

I have no pecuniary interest in the Langstroth hive, and have written this article simply as a matter of justice to him whose book on bee-culture first led me to engage in a pursuit which to me is both pleasant and profitable. Perhaps some may not fully agree with the ideas set forth in Mr. Langstroth's work; but that cannot be a good excuse for bodily appropriating that which they do admit is correct.

Hoping that every reader of the "JOURNAL" will appreciate the justice of Mr. Langstroth's claims, and aid him in the maintenance of them, I subscribe myself, ever for the right,

J. E. POND, JR.

FOXBORO' MASS., July 3, 1869.

[For the American Bee Journal.]

Italian Bees.—A. Grimm's Apiary.

MR. EDITOR:—By your permission, I will give the readers of the BEE JOURNAL some of my experience, observations, &c. *First*, I would like to say a few words aout the Italian Bee. About seven years ago, I bought a queen of Mr. Langstroth, and paid ten dollars for her. About five years ago I bought another of him, and paid him twenty dollars for her. I was well satisfied with the queens, for I think they were pure. I succeeded in raising some pure queens from them. Ever since that time I have pure Italians, hybrids, and natives to manage, and I must say that the Italian bees are much superior to the natives, with but one exception—that is, when they once thoroughly aroused, they are great deal worse to sting.

We are determined to Italianize our whole apiary this seacon, (What I mean by *our*, is myself and brother own the bees jointly—two hundred stocks—but I have the care of them.) For that purpose we have just bought forty swarms of Mr. Adam Grimm, of Jefferson, Wisconsin; and as it fell to my lot to go and get them, I would like to say a few words about what I saw. I happened to be at Mr. Grimm's a year ago last fall, at the time he opened the boxes in which he brought in his imported queens I helped him some two or three days, to pick out the native qneens in his hives and introduce the Italians. As for the queens, Mr. G. had very much handsomer ones in his own stock. The imported ones looked to me like little dark things. He did not have, I think, more than one or two well-marked queens. I made some allowance, in my thoughts, for them at the time, as having been confined so long. But this spring I recogized the same little dark things, with but little improvement since then. Mr. G. designates them as Mona queens; and I will do so likewise.

I was at Mr. Grimm's from the 11th to the 17th of May, 1869. During that time we examined a great many colonies, and when we came to a Mona stock, we almost invariably found those queens much more prolific, and the hive much stronger with bees and heavier with honey, than were the hives of his former bees. Another thing we were very sure to find—that is, they were a great deal crosser. About the progeny of those queens. The drones are black, with three narrow light-colored stripes. The workers are darker and browner; and some of them have very dark brown stripes. On the whole, they are not as handsome or bright as his other stocks; but are stronger and better workers.

Mr. Grimm has his bees in three places. Before selling any this spring, he had in his home apiary three hundred and sixty-two colonies, all pure Italians except twelve. Those twelve he let a Mr. Foster, who lives some miles away, have on shares. He is determined to have no opposition in his own apiary, so that all who purchase of him can depend on pure stock. In his northern apiary, he had one hundred and twenty-two colonies, nearly every hive in real good condition, and among them about six hybrid stocks. The southern apiary contains one hundred and sixteen stocks, all but two in good condition. I think his bees had too much honey for that time of the year. Nearly every hive contained one or more cards of comb completely full of honey. What I mean by good swarms at that season of the year, is four or five cards of comb, well filled with brood, and bees enough to cover it; with a few pounds of honey.

TWO FERTILE QUEENS IN A HIVE.

While I was at Mr. Grimm's we found two fertile queens in one hive; and without doubt, they had lived together since swarming last season; as it was too early for one to be a young fertile queen. Mr. G. said they were in a hive where more than one swarm went together last year. We are positive they both laid eggs, for we separated them, and put one part of the bees with one queen in one hive, and the rest of the bees with the other queen in another hive. We afterwards examined both, to see if all was right, and they had both been laying.

SIZE OF HIVES.

I have used several kinds of hives. I first used the Langstroth hive, 10 inches deep, 14 inches wide, and 18 inches long, all inside measure; and used ten frames to a hive. I now use a hive the same size, only 12 inches wide, instead of 14, with eight frames; and find it to work better in this locality than any hive I ever used. The honey boxes we use are about 6 by 6 inches and 5 inches deep, holding from four to five pounds of honey. We expect to put in twelve to a hive. The way we will manage it, is to take off the honey-board and lay strips of wood on the frames, thick enough to come up level with the sides of the hive, so that the boxes will sit level. We will then lay a two inch strip lengthwise and in the centre of the hive; then set on six boxes, three on each side of the strip. These boxes will have holes in the botton. Then when we want to put on six boxes more, we will take out the two-inch strip, suspend a brood comb above where it lay, and then set on the other six boxes. Their entrances will be at the inside lower corner, next to the suspended comb. We expect the bees will be led directly to the boxes by the comb spoken of.

I have made this communication full long already, and will close by wishing all bee-keepers a better season for bees this year, than the last was, which was very poor indeed with us. I also wish the BEE JOURNAL much success, as I consider it a great help to the bee-keepers, and think all should take it.

ISSACHAR CROWFOOT.

RUBICON, WISCONSIN, JUNE 9, 1869.

[For the American Bee Journal.]

Winter Ventilation.

My bees were put in the cellar on the 15th of November, averaging 25 pounds net. The honey-boards were raised one-fourth of an inch on blocks, and the lower holes closed. This carries off dampness from the sides of the hives better than the top holes open, without circulation through the mass of bees.—April 14th, the bees averaged 15 pounds, having used ten pounds, each, in five months. The strongest family used twelve pounds; the weakest used seven pounds. April 17th, set out the best hives. They had no bee bread, and had raised no brood. They made no spots of fæces on the hive or the adjoining fence—which, according to Mr. Salisbury, B. J., page 116, showed them perfectly healthy. April 25th, saw first pollen gathered. April 26th, saw plenty of eggs, but no larvæ. Have moved drone combs to sides of the hive, to retard drone breeding; and by placing empty worker comb in centre of cluster, my best hive has over 31,000 brood in all stages, with no drones emerged yet. The second best had 21,000; others 10,000 to 12,000. Brood combs all free from mould.

In 1867, put in hives without upward ventilation. Last of January water began to run down the sides, and in movable comb hives blue mould an eighth of an inch long began to appear. I inverted the box hive and raised the honey board. The water on the sides disappeared, but the mould did not; and after setting out in the spring the bees made sawdust of those combs for a month, removing nearly one-third of some of them.

H. D. Miner.

Washington Harbor, Wisconsin, June 12, '69.

[For the American Bee Journal.

The Buck-eye Tree, as a Honey-producing Plant.

I do not remember seeing the buck-eye reckoned among the honey-producing plants. Some of my colonies have made comb and stored thirty pounds of surplus honey from the buck-eye blossoms this spring. They come into bloom a few days before the white clover, and just after the fruit trees. The quality of the honey is good. It is very thick, dark colored as the bass-wood honey; but not quite equal to it in quality.

For the information of those who never saw a buck-eye tree, I would state that it grows here on the bottom lands of streams, and is the first to leaf out in the spring. The tree, blossoms, and nuts, look like a horse chestnut, and can hardly be distinguished from it, except in smell—which is very offensive.

White clover began to blossom here the first of June, but the season has been so wet up to July 4th, that I doubt if any one colony has gathered two pounds of honey from it.

M. M.

Summitt County, Ohio.

[For the American Bee Journal.]

The Cheapest and Best Bee Feeder.

I have seen none of those bee-feeders the merits of which have been so widely spread abroad through the Bee Journal. I do not claim for myself much inventive genius. In the one I am about to describe I have simply taken what I consider the better parts of two already described, and combined them into one.

One described, was a self-sealing glass jar; the top punched full of fine holes; a piece of strainer wire-cloth soldered over them; and through these openings the bees were to suck their feed, after the jar is inverted. A tin rim ⅜ to ½ inch wide was soldered around the top, to hold the jar up from the honey board, and so give a larger number of bees a chance to work on the same at one time.

Another described, was a tumbler with a piece of fine cotton-cloth put over the top, and supported by an india-rubber band; and this inverted over a hole in the honey-board.

What I have done, is to add the tin rim on the first described, to the latter. This I have done by making a rim ⅝ inch wide, large enough to fit loosely over the top of the tumbler. On the middle of the rim put a small band projecting inwards. This, when the tumbler is inverted, will hold it up from the honey-board, and give the whole surface of the top of the tumbler for the bees to work on at once. We can thus see how fast the feed lowers. The whole cost of these was eleven cents each. When not wanted for feeders, the tumblers are worth just as much for any other purpose as they ever were.

Alonzo Barnard.

Bangor, Maine.

[For the American Bee Journal.]

Queens Mating Twice.

Mr. Editor:—With your permission, I will give Mr. Pond and the readers of the Journal some facts, that he may endorse me.

First. I never said that old queens, or queens after they once begin lay freely, will mate with drones. I now say that they will not.

Second. I say young queens, before they begin to lay, may, and often do, pair or copulate more than once. As the drone dies in the act of copulation, of course she mates with more than one. In such cases—which drone effected her impregnation, I will leave for Mr. Pond to say; but I believe they all influenced her progeny.

The queen alluded to on page 140, Bee Journal, vol. 4, was raised miles from the nearest Italian drones. She could not have met one of them. Yet her progeny was two and three yellow banded. She lived three years, and never produced a black bee.

Delhi, June 4, 1869. John L. Davis.

The bees throughout the world, as known collectively to the richest cabinets, number about two thousand species.

[For the American Bee Journal.]

Novice, and What He has been Doing, up to July 5, 1869.

DEAR BEE JOURNAL: We hope your readers have not concluded that "Novice's Reverses" have quenched his enthusiasm, as he has been quiet so long. That is far from being the case. Urgent business demanded his attention so closely for the past few months that no time presented itself, save the "small hours" of the night; and, after a day of toil, those seemed hardly the thing for a general talk, such as you, Mr. Editor, have a right to expect. Our "better-half," moreover, decidedly objects to such pastime on Sundays, although we were full of matter to "gossip about bees;" and thus it has all accumulated until the present time. So here we are.

We would remark to our readers that, after sending our last article, the editor kindly gave us some suggestions, as follows, in regard to speedily building up an apiary again.

APRIL 24, 1869.

DEAR SIR: I am sorry to hear of the *reverses:* but have a suggestion to offer, which may possibly be of some service in re-establishing your apiary speedily. We all know that a prolific queen *can* lay many more eggs than, from want of room and other causes, she actually does lay. Some years ago a German bee-keeper, named Vormwalt, conceived the idea that by means of artificial incubation, this *reserved power* of a queen might be made available for a rapid multiplication of stock. He constructed a hot-bed in the ordinary manner, and sunk into or set over it a nucleus hive made water-tight; and suspended therein, when the temperature had risen to *brooding height*, frames containing combs with sealed brood, taken indiscriminately from his hives. The young bees hatched out in due time, and were taken charge of by some dozens of adult workers which had been transferred with the brood combs, there being some honey in those combs for their support. Empty worker combs were inserted in the parent hives, in place of the sealed brood removed; and thus the queens were accommodated with a fresh supply of empty cells, which they speedily stocked with eggs—encouraged thereto by the strength of their colonies and abundant stimulative feeding. These were in turn transferred to the hot-bed nucleus, when the brood was sealed. By a suitable arrangement the young bees when hatched were passed into a nucleus hive with a sliding bottom, set over the one in which the hatching was carried on; and thence used for strengthening or building up colonies. The account stated that Mr. V. was very successful in hatching brood taken out immediately after the cells were sealed. Ovipositing was thus kept up almost without intermission, and a multitude of working bees, relieved from duty, could join in out-door labors.

I do not pretend to give you the exact details, but merely an outline of the process, which your own ingenuity would doubtless enable you to improve upon, if you are tempted to try the experiment. As you have plenty of empty combs, and honey enough for stimulative feeding, it strikes me that this process might be worth trying; and if successful it would be quite a novelty in bee-raising in this country.

This letter was received about the 1st of May, and we had been for some days studying on the feasibility of making our few remaining queens supply eggs for more than one hive, as we found two of our surviving thirteen colonies were queenless in April; and we soon after killed one of the rest by accident, as will be mentioned hereafter. Hence, by the middle of May, we really had only ten queens, and our stocks were so weak that there were not enough bees, we should think, to make more than four decent swarms. We mention this, that our readers may know what we had to build up on, especially Mr. Argo, who has our sincere thanks for his kind notice of our mishap, in the July number. His supposition that the disease, or whatever it is called, was the result of our imprudence in not taking the bees in early enough, is certainly a mistake. This he would have seen by reading our article more carefully, as about half a dozen stocks were carried in quite early—just about the proper time—but they suffered alike with the rest, and the neighbor we mentioned, lost his only Italian stock in precisely the same way, with the hive half full of sealed honey, on its summer stand.

We think we shall leave our bees out next winter; but already begin to feel a dread of the result in any case.

To go back to our subject. We immediately determined to try the artificial hatching; but as the weather was tolerably warm by the 1st of May, we thought we would not then go to the expense of an apparatus, and worked in this way. We removed two frames each of sealed-brood from two of our Langstroth hives, and placed the four in an empty hive, having first shaken off all the bees. This was then placed close to our Stewart stove in the kitchen, in which we keep fire day and night—the family having little dread of the contents, as they could hardly believe that *real live bees* would be the result.

We would mention here that we have several times tried the experiment mentioned in Mr. Langstroth's book, of putting an Italian queen into a hive of black bees, and counting the age of the young bees before they gathered honey and pollen, and the time always agreed with that statement.

These bees were hybrids, and on the third day they made such a humming that we took them out of doors, and only carried them in at night. On the fourth day we opened the hive, and could hardly believe our eyes, so great was the number of gray, downy "baby bees," as the children called them; and we were much surprised to find *queen-cells started* by the little chaps.

On the fifth day they were flying so busily that we thought they were being robbed; but on going close to the hive, found they were all right.

On the sixth day we gave them a pure queen from another hive that we wished should start queen-cells; and on the seventh day, Mr. Editor, there was no disputing it, they were working briskly on the fruit blossoms, bringing in honey and pollen! In a week more, any one would have pronounced that hive the heaviest swarm we had, judging from the way they worked.

Why did they commence to work at an age so much younger than usual? Was it because there were no old bees among them, and necessity obliged them to work? We do not think we carried a dozen bees at farthest on the frames, when the bees were shaken off and brushed from them.

We formerly made our artificial swarms by raising queens in a nucleus; and then, as soon as the queen began to lay, caging her in an empty hive set in the place of some old stock, with a frame or two of brood, the returning bees making the swarm. This plan does very well, but we were obliged to keep the queen caged at least two days when she was most needed.

We have this season made twenty-five artificial swarms, and all from our ten weak stocks, on a plan which we think easier and less trouble than any we have ever seen. It is simply this: Two frames of brood and honey are removed from the parent hive, and placed in a new hive located anywhere you wish. In about twenty days they will have a laying queen, and the addition of two more frames of *sealed-brood*, if early enough in the season, say when natural swarming commences, is amply sufficient, so far as our experience goes. A friend who keeps black bees thinks *they* would require more to make a sure thing of it—which is probably true. In this case there is no hunting of queens and no caging. In fact, they need not be seen at all, unless it is desired to clip one wing of the young one, which we always do. With the four frames taken at different times from the old stock, which they will replace so quickly as to be hardly missed, there is hardly a chance of failure.

To go back a little. Our wintering disaster deprived us of all our purely fertilized queens, except one; which we explain by supposing that the hybrids are hardier than the pure Italians, which we have many times had reason to think is the case. This queen was introduced without any trouble among the "baby bees," as before mentioned. About the last of May we transferred her to a nucleus that had failed in rearing a queen, and introduced her by means of diluted honey scented with peppermint, as per directions in a former number of the Bee Journal. She was received as if she had always belonged there; but, to be sure of her safety, we looked again, fifteen minutes after releasing her, and she was moving about among the bees as quietly as we could desire. Imagine our mortification and sorrow on finding her in the evening on the bottom board, surrounded by a small ball of *hissing* bees, and just expiring. We could not forbear setting our foot on the clump of mischievous imps, after extricating the queen. She died soon after. This is the first case we have had, where a queen had once been received and was afterwards turned upon.

This accident forced us to divide our weak stocks severely in forming nuclei, to take advantage of our only chance for pure young queens. We managed to get twenty-two fine yellow ones from the brood in the hive.

We were very much surprised in opening the hive containing the "baby bees" ten days afterwards, to find the combs from which we had cut brood, filled with new *worker* comb; and, stranger still, with eggs and brood in all stages, and finally a young queen that had evidently been laying all the time since our lamented pure queen had been removed! As she is very dark, and her bees nearly black, we must suppose that she was raised from the hybrid brood, removed and placed in the hive thirty or forty days before. In that case she remained some two or three weeks in the hive, at the same time with the pure queen. We can hardly accept this explanation, and would be much obliged to some one for a better.

Our thanks are due to R. M. Argo, for his kind offer on page 15. We cheerfully accept his challenge, with the best will in the world; only it must be remembered that we had only eleven stocks to commence with. *Ten* in reality, though we will call it eleven, as we were at fault in losing the queen. Also, we had only frames of comb enough to furnish thirty hives in all—the bees having had to build the rest. As wintering is so uncertain, would it not be best to submit an account of our stock to the Editor about next April, and let him decide who made the best year's work; and he who is found to have made most progress, shall receive an Italian queen from the other.

Mr. Editor, we are sorry to say that some of the subscribers to the Bee Journal do not profit by it as much as they should do. Only a few days ago, a bee-keeper came seven or eight miles to see how we swarmed bees artificially. When asked if he had not found the articles in the Bee Journal plain enough, he said he had not had time to read the last two numbers.

Others who were at first quite enthusiastic, say they cannot get time to bother about bees; although a "patent hive," with some one to "talk it," will command their attention at once.

Is there any other business that will *pay* without some bother? Or any that can be made profitable without some care, attention, inquiry, or study? If there is, please give us some account of it.

A friend now here wintered, we think, some forty or fifty stocks last winter, without losing any, in a house constructed for the purpose. He carried them out during the warm weather to let them fly, and then put them back again. Has not a properly constructed house many advantages over a cellar? One very important one to us would be that it could be made much easier of access.

With best wishes to the Bee Journal and all its readers, we remain, Novice.

[For the American Bee Journal.]

Queen Cell Queerly Placed.

Mr. Editor: We do not wish to weary your patience with a long letter about something perhaps not at all interesting to you, but would like to relate an incident that came under our observation on the 11th of June, as we think it goes to prove that queen-cells are not always made on the identical comb that the egg was laid in. While examining an old stock that had just cast off its first swarm, we discovered a very large and perfectly developed queen-cell, capped over, attached to the bottom piece of one of the outside frames which was not two-thirds full of comb; and there was no comb within three inches of the cell. Did the queen lay the egg in the bottom piece of the frame? Or did the bees carry it there?

Fairbrother & Cram.

Maquoketa, Iowa, July 17, 1869.

THE AMERICAN BEE JOURNAL.

WASHINGTON, AUGUST, 1869.

☞ Though this number of the BEE JOURNAL contains four additional pages, we have still on hand a number of communications which reached us too late for insertion this month.

☞ The success of "NOVICE" in the artificial incubation of bees, should lead to further experiments. With a suitable apparatus and such modifications and improvements of the process as will readily suggest themselves, we think a complete revolution in artificial multiplication of stocks may be effected.

In the further prosecution of his investigation of the nature and cause of foulbrood, Mr. Lambrecht has ascertained that though its chief source is found in fermenting or fermented pollen and honey, there are at least seven secondary causes to which it can be traced. Yet he feels confident that he has it now so completely under control as to be able to produce, check and cure the disease at will. His ability to do this was recently tested by a committee appointed by the Salzgitter Apiarian Society in Brunswick, Prussia. They certify that in a healthy colony selected by themselves, Mr. L. speedily produced the disease by feeding the bees with fermenting pollen and honey, so that when examined by them the brood cells contained a tough, brownish-grey, fetid matter. Even the larvæ in new drone comb were destroyed thereby—which circumstance the committee regard as decisive evidence of the existence of the malady in its most malignant form. We have not yet seen their final report, but understand that it is conclusive as to the efficiency of the mode of treatment employed by Mr. L.,—which varies according to the particular type or stage of the disease. We presume we shall have the report at an early day; probably in time for the next number of the BEE JOURNAL.

Mr. L. designs now, if sufficient encouragement be offered, to communicate to bee-keepers his method of effectually curing a foulbroody colony in two days at most, to prevent the introduction or spread of the disease in an apiary, and to render fermented or infected honey innocuous when used as bee-feed. To this end he proposes to issue, at as early a period as practicable, a pamphlet giving his processes and the curative means employed, provided 500 subscribers at four dollars per copy, or 1,000 at two dollars, can be obtained in the United States. These prices are fixed with a view of securing to him compensation for his labor, and some remuneration for the benefit conferred on bee-culture by his invention. If efficient, a knowledge of the process would, even at the higher price of the pamphlet, be cheap to any one in whose apiary the disease exists, or where the introduction of it may be feared, for hitherto it has proved to be an unmanageable and disastrous malady when it has obtained foothold. We will receive the names of subscribers conditionally, to be forwarded only in case the whole number required is made up, and there be satisfactory evidence that the process will in all cases effect a cure.

☞ We shall hold over the "Hungarian's" story till next month, hoping meantime to find a further account of the wonderful mode of wintering spoken of by him. He did not originate the story, nor did he greatly *embellish* it. It has long been current in Germany, and is certainly almost as marvellous a narrative as that of the ancient method of producing bees detailed by Virgil.

We find the following paragraph now going the rounds in the daily papers:

☞ A victimized farmer has found that kerosene oil gives instant relief if applied to bee-stings."

It happens that, whatever else the "victimized farmer" may have found, he did not find that fact. The discovery was made by a correspondent of the BEE JOURNAL—the Rev. P. R. Russell, of Bolton, Mass., and by him communicated for our June number. We have known it to be successfully tried in several instances recently.

☞ Where pasturage is abundant in the fall, but scarce in July and August, feed your bees in those months sufficiently to keep up brooding. Bees reared in August and September may indeed come too late to aid in out-door labor before the season ends: but their presence in the hive will release a corresponding number of older bees from home duties, and allow them to engage in foraging abroad while the weather permits.

Last fall bees were observed gathering honey plentifully from the blossoms of the European Ivy (*Hedera helix*) on the old city walls of Grüningen in Germany, which are literally covered with that climber. Colonies nearly destitute of stores, procured a full winter's supply from that source, late in September, when no other plants were in bloom there. Have bees been known to frequent the blossoms of this plant in this country?

Correspondence of the Bee Journal.

WINTERSET, IOWA, June 28.—But few bees have swarmed here yet, except Italians. These have kept swarming almost every pleasant day since the 26th of May. My Italians are beginning to wake up some of those keeping bees here. Several told me, a few days ago, that their (common brown) bees never swarm before July. A large swarm of Italians came out within fifteen minutes after those visitors called. We had already sixteen or eighteen swarms at that time, though here June is generally a poor month for bees, there being almost no white clover around here yet.—M. B.

JEFFERSON, WIS., June 28.—The spring has been exceedingly unfavorable for bees here, and the summer opens rather unpromisingly. I wintered my bees very successfully, having lost only two colonies out of one hundred placed in a cellar last fall, where they had to remain till near Easter, before the weather allowed me to remove them to their summer stands. Possibly as the summer comes on pasturage may improve; but until now I have had to feed my bees liberally.—W. W.

WINTERSPORT, ME., June 22.—Notwithstanding the frequent letters and communications you receive, I am constrained to think that you do not fully appreciate the immense benefit your publication confers on beekeepers. No person who possesses a decent share of brains, can be a constant reader of the Journal and not be *progressive and reasonable*. It is hoped that you may be able to publish it semi-monthly at an early day.—G. S. S.

ALBANY, ILL.—Please send me the Bee Journal another year. I could not well do without it. My bees are doing very well this season. They commenced swarming on the 4th of June. They are hybrid Italians, and were kept in the cellar till the middle of March, without top ventilation. They came out all right.—A. B.

SHEBOYGAN FALLS, WIS., July 21.—Please find enclosed two dollars, for which send me the BEE JOURNAL. To-day I have accidentally met with late numbers, and find them full of meat—just the thing to be of value to the practical bee-keeper.—C. C. M.

SHILOH, OHIO, July 17.—Cannot get along without the Bee-Journal; wish it came oftener. —W. H. O.

VIRDEN, ILLS.—I have three very fine gold-colored queens, twenty-three days old. Two of them have been laying for nearly two weeks; the other has not laid at all, though she is the largest of the three, and looks as though she were full of eggs. What can be the reason? I do not like to destroy her, as she is so fine. I have an old Italian queen, very fine, which I put into a stock of very poor hybrids on the first of May. I took out a card of comb last Saturday, to give to a nucleus to raise queens. There were three or four eggs in some of the cells. I saw the queen at the time; she seemed all right, and was laying. Could there be a fertile worker and a fertile queen in the hive at the same time?—J. L. P.

CHIPPEWA, CANADA.—Please send me the Bee Journal another year. I trust your circulation does and will increase. I consider the publication a valuable work.—F. G. N.

CHILLICOTHE, MO., June 28.—The season last year here was very dry, the winter open and warm, the spring late and cold, the summer thus far is very wet, and bees are doing poorly.—J. W. G.

LEWISBURG, WEST VA., July 2.—Bees are doing remarkably well here this season. They have not given many swarms, but are storing a great quantity of honey. There is an immense crop of white clover, and there has been an unusual bloom from the beginning. I hope this season will close quite encouragingly to the bee-culturists, as also to the Bee Journal.—T. L. S.

HANCOCK, N. H., June 28.—Bees are doing very well here. White clover is just in blossom, and the Italians are gathering honey fast.—H. W. W.

DANVERS, MASS., June 30.—I will try bee-keeping one year more, hoping to have more success than we have had for these four or five years past. This spring my bees commenced with good prospects. Never better. Stocks strong, honey enough to breed well, splendid weather; but lo and behold! my bees began to swarm. Formerly, when I began to keep bees, I watched eagerly for swarms; but now they come when I do not think of them, one or two a day, and sometimes two together. We had two large swarms of Italians come out together and unite, and we did not attempt to separate them. I commenced with twelve stocks, and formed one strong nucleus, besides which I had fifteen swarms, at least we hived that number; but whether they all came from our hives I do not know—though I know that most of them did. And now, sir, where shall we get our surplus honey? We have had poor honey weather for a fortnight; and we cannot expect the season to last more than a fortnight longer. My bees are still pretty strong now, notwithstanding the swarms. If we do not get surplus honey this year, I shall think bee-keeping a poor business as far as money is concerned. I enclose two dollars meantime, hoping the season and the Bee Journal will bring forth good things.—E. E. P.

Osage, Iowa, June 29.—This season is hard on the black-bees, and also on the one and two-striped Italian; but the pure three-striped fellows are gathering pollen, rearing brood, sending forth swarms, &c., while the one and two-striped and the blacks have to be fed to keep them from actually starving to death. I have before this heard that the two-striped were just as good for breeding and working purposes as the pure ones; but this season, thus far, demonstrates the superiority of the pure Italians over all others. Crops, with the exception of corn, are extraordinarily good thus far.—E. G.

Portland, Maine, June 14.—Enclosed I send you two dollars to pay for the fifth volume of the *Bee Journal.* I cannot *afford* to take it at a less price. Each number is worth to me the price of the whole volume; and I take extra pains to advise all my bee-keeping friends to subscribe for it. I am under great obligations to several contributors, especially to friend Gallup for his bold way of instructing us in the mysteries of bee-keeping. If any of your contributors have occasion to visit this city, I hope they will call on me.

The season here is cold and backward. No swarms have come out yet to my knowledge. My colonies are strong, and I think will swarm, if the weather gives them an opportunity, though one or two have exhausted their patience and cast out their drones. Notwithstanding the season has been backward, I have found my bees to breed rapidly by the use of Mr. J. L. Hubbard's little tin-cone bee-feeder—the *simplest, best,* and *handiest* that I have ever seen; and thanks to Mr. Hubbard, *no patent.*

I have supplied friends in this vicinity with twenty hives of pure Italian bees this spring, and if I do not miss my calculations, I intend to be the means of inducing one thousand persons in this State to keep bees.

Only think of the immense amount of honey that goes to waste in the United States—enough in five years to pay the whole *national debt,* principal and interest. Of course it cannot all be gathered; but any additional accumulation of it adds so much to the real wealth of the country. I think, with a little exertion, the increase in this State may be fivefold in a very few years.—M. G. Palmer.

Cincinnati, Ohio, June 19.—I thought I might this year have a chance to test the superiority of the Italian-bees over the black-bees, if they possess any in regard to producing more honey. So, in the spring, I set a hive of Italians and one of black-bees side by side, both having young queens of last year, and being of the same strength—the Italian hive having a little advantage. I examined them both yesterday. Their breeding apartment is alike full of bees, brood and honey; but the black-bees have filled their supers (eighteen small frames holding about $1\frac{3}{4}$ pounds each) almost full, while the Italians have yet hardly commenced working in theirs. What may be the cause of it? I must add that both stocks were weak in the spring from the effects of last year's disease; but they are now strong and preparing to swarm. I have the Langstroth-hive, with ten frames in.

I keep my bees on the roof of my house in town, and have very good luck with them. I took yesterday from a young swarm, made on the 22d of May, fifteen frames of honey, each weighing $1\frac{3}{4}$ pounds. I took on the 22d of May, fourteen small frames, each weighing one pound, or a little over. They had made this honey, I believe from the blossoms of locust-trees in my neighborhood. The honey was very nice and white. These are black-bees.—C. F. M.

Lansingville, N. Y., July 5.—Bees are not doing much here this season. No swarms yet, and the probability is that there will not be many in this vicinity.—D. W. F.

Fulton, Ill., July 6.—Bees are swarming too much here, for those bee-owners who do not attend to them.—R. R. M.

Gnadenhutten, Ohio, July 5.—Bees in our neighborhood have not gathered much surplus honey up to this time, though we have had regular rains and an abundance of white clover, which is the main source of honey with us. The reason for this, I think, is that the bees having found so little honey the latter part of last season, exhausted their stock entirely last winter. Consequently it took them a long time to fill up their hives before they could work in the surplus honey boxes. Besides, the bees not having swarmed last season, many of the queens have become old and exhausted. This keeps the colonies in a weak condition, and hence swarms are not plenty this summer, especially from black-bees.

The past winter was comparatively mild, and bees wintered well on their summer stands, when protected from winds and rain. We know nothing here of the "bee disease," except what is brought about by bad management, which can only be cured by bee-keepers informing themselves by reading the Bee Journal and other good works on bees.—S. L.

Hopkinsville, Ky., July 9.—I could not well do without your valuable Journal. The last three numbers have amply repaid me for my subscription. I hope to be able to send you some subscribers in a short time. Bee-culture is gaining ground in this region. This has been a fair honey season.—G. B. L.

Lowell, Ky., July 6.—My bees went up from thirteen stands to fifty-one this season, all but two natural swarms. Hundreds of pounds of cap-honey besides.—R. M. A.

Tyrone, Canada, July 6.—The weather this season has been wet, cold, and windy, in this section of Canada, and consequently unfavorable for bee-keeping.—J. M. L.

Lewiston, Me., July 13.—There are but few new swarms here this spring. I wintered five stocks the past winter. All came out in fine condition; but I have had only one swarm from them, which issued on the 21st of June. June was a very poor month for bees in this vicinity; it was too wet. July has been quite good so far, and the bees are gathering honey in abundance. White clover is very plenty here this season. There are very few bees kept in this locality. I do not think there are more than twenty-five or thirty swarms in the town. I think I am the only bee-keeper in town who takes the Bee Journal. I could not think of doing without it. Long may it prosper.—HORACE LIBBY.

MONMOUTH, ILL., July 10.—Bees here are doing better this year than at any time since I came West. On June 27th, I had a bushel swarm come off, and next day I took seventy pounds of honey, made in nine frames in supers. Both the old stock and the new are working finely in the boxes. Most of the bees in this section are swarming too much; some casting as many as four or five swarms. The old box-hive is used almost exclusively.

I have on four different occasions introduced queens by scenting the hive and queen with nutmeg-syrup. Within the past week I have succeeded in introducing unfertile queens to colonies; which most writers say is almost an impossibility. I do not think it would do to introduce queens when bees are not gathering honey freely, without caging for forty-eight hours; at least there would be great risk. Robber-bees would also be more apt to pitch in, from scenting the nutmeg-syrup.

I have tried putting gum-camphor into a hive being robbed, and find it effectual in stopping the robbers.

I am confident that bee-keepers who have Italian queens impregnated by common drones, cannot keep their stock pure. Should a queen mate with a drone from a hybrid queen, her progeny will not all show the *three* bands, as they should do if pure. I have a queen of this kind now, which I raised last summer. About one bee in a hundred of her brood has lost one band. There were no common drones for her to mate with; but I had hybrid ones in two hives. I put in pure queens this spring, to prevent there being any hybrid drones raised.

Were the hybrid bees not so terribly cross, I do not see but that they are just as good, if not better, than the pure Italians. If anything they are more industrious, and the queens very prolific. But if they are all as cross as mine were, I would not accept them as a gift, and be obliged to handle them. Tobacco smoke will hardly have any effect on them; but the Simon Pure are a source of great pleasure to a lover of bees.

It seems strange to me that bees have gathered as much honey as they did; for during the past month we have had almost constant rain, so that bees could not work one-fourth of the time. But the rains have kept the white clover in bloom; and it now looks as if it would continue for ten days longer. Basswood is just coming into bloom, so that bees near the timber will have a fine chance. Mine are in town, and timber is not very near to me, though still some within a mile, and my bees will have some little chance. Honey will no doubt be quite cheap this year.—T. G. McG.

OSAGE, IOWA, July 5.—My private correspondence on the bee question is very large. Bees are doing rather indifferently well throughout the entire north; and as far south as Memphis, Tennessee, they are doing extraordinarily well.—E. G.

MAQUOKETA, IOWA, July 17.—Enclosed please find two dollars, for which send to our address the fifth volume ot the American Bee Journal. We would not do without it for the price of four stocks of pure Italians every year. We have had the pleasure of perusing its pages once a month for the past three years, and aside from the pleasure the reading afforded, it has been at least three hundred dollars' benefit in the way of cash obtained by a knowledge of some important facts, that we would have learned from no other source than the Journal.

Bees are doing exceedingly well here this season. Ours commenced swarming on the 23d of May, and notwithstanding the bad weather we had in June, they have been issuing out nearly every day since, and are still boiling out as if they were bent on filling every empty hive we could get. They stored some honey in boxes during the period that crabapple-trees were in bloom, which is something unusual for this section of country.—F. & C.

FULTON, ILL., July 15.—Bees are doing very well here when they can get out between the showers, as it is raining about half the time. They gather honey enough to keep breeding rapidly; and with most bee-owners they are swarming too much. They are not storing as much surplus honey as most of us bee-keepers here would like to have; but if we have good weather the rest of the season, they are in a condition to improve it. The Alsike clover yields more honey here this season than the white, or at least they worked better on it.

I would like to inquire of some of the old bee-keepers how to get the bees to work in boxes, when they are very strong in numbers, and there is guide-comb put in the boxes.

I would also like to know if it is generally so that the progeny of queens imported direct from Italy is crosser than after they have been here several years. I have two imported queens, and their progeny is a great deal crosser than that of those I received from Mr. Langstroth.—R. R. M.

OLNEYVILLE, R. I.—Enclosed you will find two dollars, for which please continue to send to my address the American Bee Journal, for I cannot do without it. It is a welcome visitor, and no one that has more than one colony of bees should fail to get it.—J. K. W.

ST. CHARLES, ILL.—Best season for bees that we have seen for years.—M. M. B.

[For the American Bee Journal.]

Isolated Queen Cell.

In removing surplus honey from a Langstroth, full-glass hive, with frames in the upper box, I found a sealed queen-cell, and no other brood! This is something new to me. The bees must have taken the egg from the brood-chamber of the hive.

M. MCMATH.

SNICKERSVILLE, VA., July 19, 1869.

[For the American Bee Journal.]

Honey Gathering and Bee Tricks.

Mr. Editor:—My bees are just now (June 14th) having a glorious time among the tulip trees and locusts, which are very prevalent here and have bloomed profusely this season. For six successive days, the bees have labored with a determination and zeal without a parallel in the insect creation, keeping up one continuous stream of dozens abreast charming and gladdening the soul of him who is destined to reap the fruit of their labor. Why, Mr. Editor, the delights which the period of swarming and hiving, and the accumulation of stores of honey afford the apiarian, are without question among the richest of all his earthly enjoyments.

My bees are *now* prepared to go into winter quarters, with stores amply sufficient for every emergency—the product of one short week; for they enjoyed only about one half of the fruit tree blossoms, the honey of which was nearly all expended in the production of brood. If I remember correctly, Mr. Langstroth says in his work, that the tulip tree is the greatest honey-producing tree in the world. But, Mr. Editor, not doubting the correctness of this invaluable author, I must say that it must be very good if it surpasses the locust.

Not to be too tedious on this subject I will mention a trick which one of my colonies tried to play upon me, and which, if it had succeeded, would have been quite a joke truly. The day after it had cast the first afterswarm, I made a draft on it for a young queen, which I secured from a cell that was about mature. This queen was designed for a quenless colony, but was lost in introducing. The fourth day after the first cast I made another draft on it for a cell, intending to introduce *the cell* this time, for better success. I was just about to insert the cell in its intended hive, when, accidentally and luckily too, my attention was called to the appearance of a portion of a scale protruding from its apex, resembling part of the capping of a drone or queen cell. This was a poser, for the cell otherwise, to all appearance, had not parted with its inmate, being waxed over as completely as any cell I ever saw. The appearance of this scale however created suspicion, which caused me to make an examination to satisfy my curiousity, when lo, to my surprise and chagrin I found a *dead bee* inclosed. Now, Mr. Editor, was the circumstance of this bee being closed up in the cell purely accidental; or did the bees, foreseeing my intention to demand another queen cell, and being enraged at my former interference, really think to play a joke on me, by defeating my calculation in this way?

By and by, I will favor you with a few interresting items connected with the swarmings of this hive, which to me at least are very strange, serving to confirm some principles previously known in the economy of swarming, and suggesting others that are *new*.

John L. McLean.

Richmond, Ohio, June 14, 1869.

[For the American Bee Journal]

Does it pay to paint Hives.

It is readily admitted that hives look better and will last longer if painted than if left unpainted. But I would like to know if bees will or can do as well in painted as in unpainted hives. By painted hives I would wish to be understood as referring only to those so painted as to be nearly or quite impervious to moisture.

Now, wherein is an unpainted hive superior to a painted one? Simply in this, that, if properly covered, it will keep the bees drier at all seasons of the year, (and this is of great advantage in cold weather), and in cold weather the bees will be kept much warmer. The moisture evaporates through all parts of the hive, keeping the bees dry, quiet and warm, avoiding dysentery and an undue consumption of honey.

I expect to have corncobs, saw dust, shavings, ashes, and other absorbents thrown into my face, to get out the moisture; but still I cannot help thinking that hives would keep bees better if unpainted.

Some of these absorbents may be useful, in keeping the bees warmer by thickening the walls of the hive. But is not the paint useful only so far as looks and durability are concerned; and is it not positively injurious, as retarding the evaporation of moisture? This is the result of my observation and experience, and I believe the damage is greater by far than the cost of a new hive occasionally.

I keep my bees on benches in the open field, some are under trees, with a temporary cover for each hive. In the winter I keep them in a part of the house cellar. And having a few unpainted hives all the time, I have found that bees in them keep in bitter condition.

I would like to know the experience of others.

J. L. Hubbard.

Walpole, N. H.

[For the American Bee Journal.]

Alsike Clover Seed.

Mr. Editor:—I would like to make some inquiry through the Bee Journal, of its many readers, in regard to the time and mode of saving and cleaning Alsike clover seed.

I believe it has been pretty thoroughly discussed and is generally believed to be a good honey-yielding plant, and also very good for hay—equal to red clover, if not better. But as to the mode and time of saving the seed, I do not remember that anything has been said. I would like some of those among the readers of the Journal who have tried it, to give us some information on these points.

I have been trying for several years to raise this kind of clover, but always failed until this season. I bought seed from different parties who advertised largely; but when I got it, I found it was all mixed with a great variety of seeds, dust, &c. And I never got any *alsike* to grow, without having numerous noxious weeds to come up with it. At last I saw a notice in the Bee Journal that Mr. H. M. Thomas, of

Brooklin, Canada, had *pure* seed. I sent a small sum to him to pay for some, and in a short time received by mail 1½ pounds of what I suppose to be *pure* alsike, as there was not a seed of any kind, except the alsike in the package—not even a particle of dust. It was put up, too, in a good, strong, cotton sack, so that every seed put therein came to me; whereas the seed put up by others was in paper bags, some of which were torn and nearly half the seed wasted before it reached me.

The seed I got of Mr. Thomas is growing very well, though it was sown late (April 23). I will endeavor to get more seed from Mr. Thomas next spring, and sow several acres; and would like to know the best mode of gathering and cleaning the seed myself, that I may not be at the trouble and expense of sending all the way to Canada; and I presume there are many others in the same condition. Those having the knowledge will please communicate it through the JOURNAL, and doubtless oblige many readers. H. NESBIT.

CYNTHIANA, KENTUCKY.

P. S. I saw some Italian bees gathering honey freely from *red clover* on the 25th and 26th of June last. Bees are doing well here.

[For the American Bee Journal.]

Will some of your able correspondents through your valuable paper, inform me how I can get honey from my bees.

In the spring of 1864, I had only three swarms; I have now ninety-three, all from the three. I never sold a queen, and do not care to keep more than ten stocks, and from them get what honey I need in my family.

The cost of hives and annoyance of swarming and hiving, without honey, is too much for me, not having "bee on the brain."

Have you a *legitimate money-making man* among all of your subscribers or correspondents who will inform me how I can get honey, and no more bees?

My bees swarm when they have ample room for fifty pounds more honey in the boxes over the hives, and often without making a pound of honey in the boxes.

F. DANIELS.

GRAFTON, VT.

[For the American Bee Journal.]

I would suggest for the consideration of correspondents, that restricting themselves to argumentation, comments, and statements of facts, would give more permanent value and real interest to their contributions. Readers want remarks on bees and hives; discussions of debateable points of theory or practice, correction of misconceptions, exposure of error or misstatement, &c., and not ridicule of other correspondents. It is indeed not always easy to deal with such matters without letting some pungency intermingle: but personalities should be avoided. While fresh, they are amusing to some, but they do not read well after the volume is bound and put away in some good company for the use of apiarian posterity. E. A.

[For the American Bee Journal.]

A Paper Quilt.

MR. EDITOR: While perusing Mr. Lambrecht's able article, "The effect of water on the combs and life of the bees," I was expecting in every line some mention of the use of *paper*, instead of straw, for the purpose of absorbing the surplus moisture so detrimental to the prosperity of the bees in winter. For the benefit of the readers of the Journal, I will describe what we call a "Paper Quilt," answering several purposes: *First*, carrying off the moisture. *Second*, keeping the bees warm. *Third*, allowing the bees to pass to any part of the hive, *en masse*, in the coldest weather; in which condition they never perish for want of honey so long as there is any in the hive; and *last*, but not least, the quilt offers better opportunity for feeding in cold weather than any other arrangement yet known.

To make the quilt, take four pieces of half-inch board, one and a half inches wide, and of a length so that when nailed together the inside of the frame will be as large as the inside of the hive on which it is to be used. This done, you have a frame or box the size of your hive and one and a half inch deep. Next, paste four sheets of brown sugar paper over the top edge of the frame, allowing on every side one or more sheets to come down over the outside to the lower edge of the frame, to keep out cold. A slat nailed across the top, to handle it by, and the quilt is finished—cost, five cents.

The cap or chamber of the hive should be ventilated near the top. Two half-inch holes on opposite sides will be sufficient to keep the interior of the cap dry. I prefer offering ventilation for the bees near or at the bottom of the hive. Give plenty of it. Twenty stocks are lost for want of ventilation, where one is by giving too much. But do not allow a draught of air through the hive, so long as we can prevent dampness collecting so much cheaper and safer by the use of the paper quilt.

Every open-top hive, whether of straw, paper, or wood, should be provided with such a quilt, whether wintered indoors or out. We do not consider a hive half finished without one. Food can be given to the bees by laying down honey in the comb on top of the bars; or liquid sweets, water; or flour placed in empty comb will be taken down when needed, in cold or warm weather. A shallow feeder of any form may be used, if preferred to comb.

C. HASTINGS.

DOWAGIAC, MICHIGAN.

Honey Vinegar.

Take thirty gallons of rain-water, heat it, and put it into a barrel; add two quarts of whiskey, three pounds of honey, five cents worth of citric acid, and a little mother of vinegar. Fasten up the barrel, and put it in the cellar, and in a short time it will contain vinegar unsurpassed for purity and excellence of taste.—*Kretchmar's Guide Book.*

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The Origin of Honey.

The following is an abstract of a paper on the above subject, read before the Bristol (England) Microscopical Society, by W. W. Stoddard.

Although honey is a familiar body, it is curious to note how little mention is made in any chemical or botanical work, of the changes that take place in its elimination, of its origin, or even of its composition. Most chemical authorities simply state that the solid crystaline portion of honey is grape-sugar, but say nothing of the liquid. Johnson, in his "*Chemistry of Common Life*," says: "Honey is formed and deposited naturally in the nectaries of flowers, and is extracted therefrom by the bees. When allowed to stand for some time, it separates into a white, solid sugar, consisting of white crystals, and a thick semi-fluid syrup. Both the *solid and the liquid sugar have the same general properties.* The solid sugar of honey is identical with the sugar of the grape." Such is the drift of the whole information that can be gathered respecting the composition of honey.

On dissecting the honey bee, we find the proboscis continued into a beautiful ligula or tongue. It is a flexible organ, covered with circlets of very minute hairs. The ligula of the honey-bee differs from that of the other divisions of the bee-family (the Andrenidæ) both in shape and miscrosopic appearance. It is probable that the bee uses the ligula by inserting it in the nectar, which would be plentifully collected by means of the hairs before-mentioned. These hairs very likely answer a somewhat similar purpose to the teeth of the molluscar tongue. At the base of the proboscis commences the œsophagus, which after passing through the thorax, terminates in an expanded sac, termed the honey-bag. This is an elastic glandular organ, placed before the entrance of the true stomach. Into this sac the saccharine fluid enters after being swallowed. Should, however, any more solid substance be present, it is forwarded into the true stomach for trituration by the numerous teeth with which it is furnished. The honey gland also secretes a peculiar acid to be mentioned presently. The bee retains the fluid portion in the honey-sac till the proper time should arrive for deposition in the cell of the honey-comb.

At the base of the corolla of a flower, on the thalamus, is a part termed by the botanists "the disc." It is that portion which intervenes between the stamens and the pistil. It is composed of bodies usually in the shape of scales or glands. When examined at the proper season, they are seen to abound in a thick, sweet fluid, which, since the days of Aristotle and Virgil, has rejoiced in the name of "nectar." On this account the part yielding it received formerly the name of "nectary." Even in the present day those organs are the subject of much misapprehension. Linnæus and his followers give the term nectary to any gland or organ for whose office they could not otherwise account. The plants which furnish the greatest quantity of nectar, and are therefore most liked by the bees, generally excrete it from the disc of the flower. On many plants, however, as ranunculas and fritillaria, a small globular organ occurs at the base of each petal, and in which also the nectar is enclosed, though not in such profusion as in the disc before alluded to.

As will presently be shown, the nectar is a simple solution of cane-sugar formed from the amylaceous sap of the flower, and elaborated for the nutrition of stamens and pistil. *What the bees find in the flowers is the surplus left when those organs have been supplied.* The author examined every flower he could collect at the early season of the year, (April and May,) and found sugar in them all, whether furnished with discs, or nectariferous glands, or not; and came to the conclusion that sugar is necessary for the male reproductive organs of the flower, as it is in them chiefly to be found—the so-called nectariferous body merely serving the purpose of a reservoir.

The plants which, in England, are most attractive to bees, are mignonette, currant, hazel, wall-flower, hollyhock, raspberry, broom, rosemary, lime, buckwheat, clover, willow, gooseberry, lemon thyme, heath, turnip, osier.

On examining an immature blossom of a wall-flower, the vessels will be found filled with an amylaceous fluid which gives a distinct blue with iodine. After the lapse of from twenty-four to forty-eight hours, the flower having become much more expanded and the stamens more mature, the fluid on being again tested will have a sweet taste, and give a dirty blackish-brown, instead of a blue with iodine. On cutting out the disc of several ripe specimens of wall-flower the author obtained a syrupy, clear, colorless fluid. This was mixed with a small quantity of distilled water, treated with lime and carbonic acid in the usual way, and filtered. The filtrate was then concentrated, and allowed to crystalize spontaneously on a glass slip. The result was a beautiful regular cup of crystals of cane-sugar.

As the flower became mature, the saccharine fluid was acted upon by the vegetable acids more and more, until at length, when the ovary being fertilized and the flower dead, a last examination showed the saccharine residue on the withered disc to be nearly all grape-sugar, almost incapable of being fairly crystalized.

The bee, visiting the flowers when in their prime, inserts its ligula into the blossom, and laps up the greater portion of the liquid-sugar, which, after passing through the œsophagus, is deposited in the honey-sac. It here comes in contact with the secreting glands, which emit an acid which the author's experiments showed to be identical with formic acid.* This it is which doubtless causes the peculiar tingling sensation at the back of the throat when much honey has been swallowed, and which is more perceptible to some than others. The bee, after its arrival at the hive empties the contents of the honey-sac into comb, where it remains until the store of honey is taken. When separated from the comb, the purest honey is a clear, thick, liquid, which, after standing, becomes thicker, till at length it "sets," as it is technically called. A small bit of this, placed under a quarter of an inch objective, shows that this is owing to the grape-sugar (which has gradually been forming at the expense of the cane-sugar) crystalizing out in extremely thin, regular, six-sided prisms. All the cane-sugar is retained in the liquid portion of the honey. This crystalization proceeds till the whole of the cane-sugar becomes converted into grape. When this takes place, so great is the proportion of crystals that the honey is said to "candy," and is not considered so good from the presence of acetic acid, which is produced by the grape-sugar, which, in its turn, undergoes a change, through the agency of fermentation. The honey crystals are not identical with those of cane-sugar.

On more closely examining a slide containing a bit of old honey, besides the prisms, will be seen small bundles of crystals. These are manna-sugar. They remain after honey has been fermented, and may thus be separated. With these, small round or oval bodies will also be noticed spread on the field of the microscope, and on the pollen globules, showing in a beautiful manner from what flower the honey was collected. Of course they vary with each locality; but it is worthy of remark that a bee will only visit the same species of flower at the same journey; for the examination of a great number of bees will show that two kinds of pollen are never found on the same insect, although they may be very different on another, working on the same flower-bed. A single bee, with all its industry, energy, and innumerable journeys it has to perform, will not collect more than a teaspoonful of honey in a single season; and yet the total weight of honey taken from a single hive, is often from sixty to one hundred pounds. A very profitable lesson of what great results may arise from persevering and associated labor!

The evidence on which the author relied for the presence of formic acid, was by distilling the honey and receiving the distillate in an alkaline solution. The resulting solution, after decomposition by an acid and evaporation, afforded all the usual reactions, and readily reduced the salts of silver.

The foregoing facts, therefore, clearly show that—

First. Honey is derived simply from a solution of cane-sugar, identical in every respect with that from the sugar-cane.

Secondly. That it afterwards receives the addition of a small quantity of formic acid from the glands of the bee.

Thirdly. That cane-sugar afterwards becomes gradually altered into grape-sugar by chemical decomposition.

The flavor of honey is, of course, quit accidental, and dependant on the aroma of the flowers the bees have visited.

[From the Keokuk "Gate City."]

Honey Dews in the West and Southwest.

It is now over forty-six years since myself and some three or four other boys stood on a gravel bar on the east fork of White Water river, in Union county, Indiana, and near the village of Brownsville, and in the afternoon the same day we saw drops of pure honey falling and lighting on the leaves of the alders. All of us tasted of the honey.

The weather was quite dry; the atmosphere somewhat smoky, the days were quite warm, and the nights rather cool; and from that time to the present time I have witnessed many honey dews, and all of them have come on under similar conditions of the atmosphere; that is, the weather has always been dry, with cool nights and warm days. Then, again, I have observed, under certain conditions of the weather, that honey bees will work but little on anything, and will not deign to notice the bloom of buckwheat, from the fact that it contained no honey.

Honey dews in the valley of the Mississippi, viz: forty degrees north, have generally come in June, sometimes about the 1st of September, though but seldom at that time,

I will now proceed to give some observations that I made when on my way to California, in the summer of 1850, and from about the 25th of

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*We suspect that this formic acid will be found to be not a secretion, but the product of a secretion.—Ed.

August to the 1st of September of that year; and will preface those observations by presuming that many persons have seen a plant commonly called dew plant,(in botanical works called Deosmer*) that at mid-day, in the middle of a warm room will be covered with cool dew, and bear in mind that on the Humboldt river there is much alkali water, and bare alkaline plains; that vapors from those plains may have an influence on the higher stratas of the atmosphere, and produce chemical results that have not heretofore been investigated by skilful chemists.

But let us have facts.

The first honey dew that I saw on the Humboldt was on a plant resembling the dew plant. I stood on an alkali surface, with no other plant touching it, and was loaded with pure honey, with a pleasant flavor.

I ate sparingly at first, and finding it good, I hunted for other plants of that same kind, and found them all loaded with honey, while there was no sign of honey on the grease wood and sage bushes, and but little on the willows.

Within a few days, and farther down the Humboldt river, the willow trees were loaded so heavily with honey that it bent them considerably; and in going through, my clothing became so coated with honey, that I took off everything and washed them out at the river, on different occasions, after it had been my turn to get up the oxen.

Then again still further down and near the sink or lakes formed by the Humboldt, there was much coarse grass, almost like broom corn, the blades of which were so loaded with honey that the little Indians and squaws were stripping it off with their fingers, putting it in to bowls, made from tula or bulrushes, and boiling the honey in copper kettles until it would grain slightly, and then stowing it away in tula vessals, where I ate a small amount. It tasted quite pleasant, but I would not pretend to say that the squaws looked neat that gathered it.

I made some other observations, but it is only honey that I am writing about just now.

I have kept a large stock of bees for thirty years, and have noticed, although the weather may be quite dry, if the nights are also uncomfortably warm, that bees gather but litte honey, and the only reason that buckwheat is considered valuable as a honey plant, is because it blooms generally in dry weather late in the fall, when the difference in the temperature between two o'clock in the day and two o'clock at night is sufficient to favor the production of honey.

Let me use one more illustration. Let any person place his hands on the grass of a warm evening, and he will find the dewy grass much cooler than the surrounding atmosphere, or even than the earth upon which it grows,

That in the growth of vegetation there are minute chemical changes effected that under favorable circumstances will produce in the bloom honey, and that adverse circumstances would produce but little if any honey. That under certain conditions of the atmosphere, honey, or as it is generally termed honey dew, is produced in vast quantities, and comes down direct from above, covering the leaves with a thick coat of pure honey, most abundant on all kinds of leaves; and when it is rather light, it may be seen only on the hickory and some few other varieties of trees.

Those extraordinary falls of honey dew are frequent in the desert country east of the Sierra Nevada Mountains, sometimes heaviest in one locality, then in some other place.

This phenomenon is probably produced by cold currents of air passing over the Sierra Nevada Mountains and coming in contact with the heated and partially stagnant atmosphere of the desert country, impregnated with alkali, to the east of those mountains. But in all cases within my observations, particularly on the Humboldt, the weather has been dry, the atmosphere a little smoky, the days warm, and the nights quite cool indeed. Those signs are so invariably the same that I have frequently predicted a honey dew before seeing it.

I am also aware that some persons contend that honey dew is but simply the excrescence of certain aphides; but a microscope will soon explode that theory.

All advance in ideas are only theories until they become settled facts or exploded theories, and the foregoing observations have been penned with the expectation that they will be not only criticised but ridiculed.

But if our Government or the agricultural department thereof can be aroused sufficiently to cause the necessary investigations to be made I will endure the ridicule.

Now that the Pacific Railroad is completed it would be but a small matter for our Government to send out some two or three able chemists, with the necessary apparatus for analyzing and testing the condition of the atmosphere at the time of those great falls of honey dew.

A. W. Harlan.

[For the American Bee Journal]

Fertile Worker Bees; or, Undeveloped Females.

Since writing my previous article on fertile worker bees—see page 24, volume 5—I have had another very clear confirmation of that article in my apiary. In a stock of Ligurian bees that lost its queen in April, 1869, I put in a brood comb out of another stock, on which they raised three royal cells, two of which I cut out on the ninth day. I examined the comb again on the seventeenth day, and found the royal cell still sealed. On opening it, I found the young queen dead in the cell, no queen in the hive, and nearly all the brood hatched in the comb I put in.

On May 22, I again examined all the combs and found no queen in the hive, but a number of eggs laid in one comb. On carefully examining the worker bees on this comb, I saw one going from cell to cell, putting its head in, the same as a fertile queen does, to see that it is cleaned out ready for an egg to be deposited in it. At last she found one, and inserted her abdomen in the bottom of the cell, and laid an egg. As she was withdrawing her abdomen, I caught her, and put her under a glass in the house.

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*This is probably a mis-nomer.

This is the second fertile worker bee I have caught in the very act of ovipositing. This bee is little or no different in appearance to that of other bees.

May 24. Again examined all the combs, and found no qneen in the hive, but more eggs laid by fertile workers; and on the comb containing them, I saw a worker bee go from cell to cell, and lay eggs in four separate cells. I then caught her when withdrawing her abdomen out of the last cell, and took her into the house.

These two fertile workers were not attended by the other bees, the same as the first fertile worker that I caught, but appeared excited and walked on the comb rapidly, not in that quiet sedate way a fertile queen does when ovipositing. One of the cells, (in which I saw the worker lay eggs when the comb was in my hands), was so deep that she had great difficulty to get her abdomen to the bottom of the cell, to fasten the egg she was laying. Her body not being much longer than that of another worker, her wings caught in the edge of the cell and prevented her from going deeper; but after several attempts, she got her wings close to her body and then went with it into the cell, so deep that her head was below the entrance.

On June 3d, that good and clever bee-master, the Rev. W. C. Cotton, (who has written several works on bees), being on a visit to me, we examined all the combs in this hive again, and found a great quantity of brood produced by fertile workers, and some of the drones ready to emerge from their cells. Under one large conical cover, we found three larvæ perfectly developed in one cell; and, under another large cover, two larvæ in the same cell. We removed this comb, containing eggs and brood in all stages of developement, laid by fertile workers.

We did not see any fertile workers laying eggs, but it appears there are several in this hive, as more eggs had been laid since I removed the other two fertile worker bees.

I put a sealed royal cell in one of the combs, and the queen was hatched the next day. When she commenced laying, the fertile workers all disappeared.

William Carr.

Clayton Bridge, Newton Heath, near Manchester, England.

Careful experiments show that pure air is necessary not only for the respiration of the mature bees; but for the hatching of the eggs, and developing the larvæ: a fine netting of air-vessels enveloping the eggs, and the cells of the larvæ being closed with a covering filled with air-holes.

Bees prefer to gather *fresh* bee-bread, even when there are large accumulations of old stores in the cell.

[For the American Bee Journal.]

The Sagot Swarm and Drone Catcher.

Mr. Sagot, a distinguished French beekeeper, describes thus this new implement.

With four thin boards make a flat tube or gallery, four or five inches wide, three fourths of an inch deep, and twenty inches long. Make the bottom of both ends thinner in order to fit the entrances of the hives.

Cut out two or three inches of the upper side of both ends, and replace it with sheet iron perforated with holes 5.32 of an inch in diameter, or by a grate with meshes of same dimensions.

Several days before swarming is expected, insert the tube or gallery between the stock hive and an empty one prepared for the reception and establishment of a swarm. Adjust it so as to fit closely the entrances of both hives, forming a channel of communication between them.

The workers will soon learn to pass in and out through the holes in the sheet iron or the meshes of the grate; but the drones, being too large, will pass along the gallery, and either enter the empty hive or collect under the second grate.

In the interior of the gallery, two or three inches from the end near the stock hive, fix a vertical swipe made of light tin and suspended on a horizontal wire. This swipe must fit the gallery at the top and sides, but leave a space 5.32 of an inch at bottom, to permit the bees to pass. The drones following them push forward the swipe and enter the gallery likewise, but cannot return, for two small nails prevent the swipe from moving back in the direction of the stock hive.

As the swarm goes out, the workers pass and the drones push forward the swipe. The queen enters the gallery, the drones at the other end, vainly seeking for a passage out. Yet the swarm clusters, and missing the queen soon return to the hive. As some bees have entered the empty hive, and have been followed by the queen, the returning workers, attracted by the call, direct all the swarm into the new hive.

As soon as you ascertain that the swarm has settled in the new hive, place it where you intend it to stand; and adjust your swarm-catcher, to some other hive.

By means of this device you can likewise easily get rid of all the drones—letting them perish in the empty hive; or if you wish to preserve them, remove the swarm-catcher in the evening, and allow them free entrance to their hive.

The sheet iron, properly perforated, is easily procured in France. but I do not know whether it can be obtained here. There will be some demand for it, for this device, and also for Dr. Preuss's process of pure fertilization of queens.

C. Dadant.

Hamilton, Ills. July 6, 1869.

P. S.—Mr. John L. McLean, on page eight of the July number of the Bee Journal, revives his business of puzzling the bee-men. On page 172 of the third volume, he gave us an enigma to solve. What will be his third? C. D.

[For the American Bee Journal.]

Use and Make of Movable Comb Hives.

To suppose that a movable comb hive is any advantage, unless proper use is made of those movable combs, is all moonshine. In other words the person who pays ten dollars for the right to use the movable comb hive and puts a swarm of bees into it, expecting a large profit from it simply because it is an improved hive, but pays no attention to the bees afterwards, cannot and will not receive any more benefit or profit from it than he would from a common box hive of the same form and dimensions, similarly treated.

On the other hand, in my travels among beekeepers I have found one very bad feature, and, in almost every instance, the fault is in the maker of the hive. For example, A buys a right to some patent and one sample hive. He employs some carpenter to make a dozen hives, and furnishes the sample as a model by which to make them. The hives are all completed, paid for, and placed in readiness for use. In due time A puts bees in some of them, and commences operations. By and by, he wishes to exchange or transfer frames or combs from one hive to another, and he finds that in no two hives, hardly any of the frames, are made alike; in other words the frames in one hive will not fit in another. He has movable combs, it is true; but of what advantage are they to him? Now this is no imaginary evil. It is one almost universally experienced, wherever I am acquainted. I have Langstroth hives, Lee, Kidder, American hives, &c. all in the same fix—all owing to the carelessness or ignorance of the carpenters who made them. Langstroth hives that I am acquainted with, are almost universally made a perfect moth nest. The frames come close to to the sides and bottom, so that a bee cannot pass around and under them; and the moths revel in perfect security, in consequence of this misconstruction. Make your hives and frames all exactly alike. Three eighth's of an inch between the frame and the ends, and half an inch between the bottom bar of the frame and the bottom board, is the proper distance. If more room is given, the bees are apt to fill in with comb.

A movable comb hive properly made, and Italian bees properly managed, I consider perfectly moth proof. I have been repeatedly asked, in private letters last winter, why I do not write an article on the bee moth question for the Bee Journal. The reason is this, I think that the moth was made on purpose to destroy the careless beekeepers' bees and get them out of the way. I have kept bees for forty years, and never had a swarm injured by the moths. And yet, during that time, I have seen any numbers of swarms destroyed by them in my immediate vicinity. Well, you will say—"Gallup has been a lucky dog!" I do not take any stock whatever in *luck*, and never did.

Querist, in the February number of the Bee Journal, page 148, thinks that he has found a chance for Gallup to do something. But as Novice lives so much further south than I do, I have every reason to believe that he is correct. My experience with the form that I use and the form of the American hive is this: the form of hive I use has produced one third more bees and double the quantity of honey, side by side, and under the same management. At present I need not tell the reason why; for if friend Puckett accepts my proposition, you will in all probability get the reason, *pro* and *con.* If Gallup sees any chance for fun, he will be on hand.

The many correspondents who are asking my views on that "bee disease," will get them by and by.

Elisha Gallup.

Osage, Iowa.

[For the American Bee Journal.]

To Supply Best Queen Cells.

Mr. Editor:—I wish for the benefit, if it may be, of all the readers of the Journal, to speak again of the convenience of something like the "Long Economic Hive," described in the May number, for keeping up a supply of celled queens.

It will be remembered that, in this hive, the frames are inserted crosswise, with two entrances on the *sun* side, one near either end.

Let such a hive, full and in good order, contain the choicest queen. Then, at the proper season of the year, or when it is desired to raise queens, lift out a frame near the middle and insert a closely fitting division board in its place—thus making for the time two hives of one, with a separate honey-board for each part.

The queen being in one part of the hive, the bees in the other part will, from her eggs, proceed to construct queen cells, which after nine days may be carefully cut off and removed to other hives, or to the queen-rearing boxes, and the queen, with due precaution, changed to that end of the hive; when the unqueened part will, in turn, proceed to construct queen cells, and so on alternately.

The advantages of this method are:—

First. Its convenience in having statedly through the season, a supply of maturing cells.

Second. Its safety. The bees in both parts having the same mother smell alike, *and like her;* on which account she is not so likely to be injured.

Third. Its utility. The bees not being much disturbed in the change, nor removed from their stand, are not in so much haste, and consequently commence with younger grubs, or with eggs; and the stock being stronger than a small nucleus, keeps up a more equable temperature and a better supply of food, thus producing more perfect queens for future mothers.

Fourth. Its certainty. By this process one is sure of cells at the time, and as there is supposed to be nothing impure about the hive, there can be no mistake about the queen as raised, unless spoiled or injured in the process of fertilization afterwards.

I continually use three of my best queens in this way, and so have every three or four days a fresh supply of cells, to be made use of according to circumstances, in the yard, or otherwise, to mature for market. I have yet lost no queen by the frequent change, and like the method much better than any that I have seen described.

J. W. Truesdell.

Warwick, Canada, July 30, 1869.

[For the American Bee Journal.]

Stocks and Hives Suited to Pasturage.

The facility afforded for securing new colonies of bees, to any desirable extent, by artificial means, removes much of the interest formerly felt in natural swarming. The little time required for fully stocking any field, by annually doubling the stock by natural swarms, until the field is fully occupied, renders the question of increase of colonies a subject of minor importance.

Every apiarian, with a field limited in its extent and power of production, must naturally inquire—"By what means may I secure the greatest amount of honey produced by my field, in surplus, in the best state and shape for market and use?"

I will hazard a few suggestions in answer to this inquiry.

1. Negatively. Keep no more bees than your field will supply. Limit the number of your colonies strictly to the capacity of your field. If you have as many colonies of bees as can be sustained during the working season, and secure sufficient stores for winter, little surplus need be expected. In such case the result would naturally be that a few strong colonies would give some surplus; the medium one might just squeeze through the winter; and the weak ones starve to death. Under such circumstances, one-half the nümber of colonies would give double the surplus that the whole would do.

2. Procure hives with surplus room for 150 lbs. or 200 lbs. of honey. Place in such hive the working force of two of your common colonies. You may thus secure double or triple the working force in each colony, and secure from one colony 200 lbs, or more, of surplus honey. This may be done, if your bees swarm, by placing two or three swarms in the new hive. Or by placing in the first swarms issuing from the old hive; place the new hive in place of the old one, and drive out all the bees from the old hive; they will enter the new hive. Place the worker brood in a small box, putting it in communication with the new hive. They will hatch all the brood, and secure thus a great colony.

I now think, from experiments already made, that colonies may thus be brought to an average of 200 lbs. One ton from ten colonies per season.

If I had an apiary with common swarming hives in use, I should treat them in that manner, confidently expecting an average of from 150 lbs. to 200 lbs. Judging from my past experiments with the large hives, I have no doubt I should secure it. If I feared the stock was too large for the field, I should divide it, placing it in two fields.

If any of your readers have doubts of the success of such course, and see obstacles in the way, I would thank them to state them in the Bee Journal, and I will seek to remove any imagined objections.

Jasper Hazen.

Albany, N. Y.

[For the American Bee Journal]

Influence of Locality.

Mr. Editor:—I had almost come to the conclusion that it was useless for me to be at any more expense in trying to succeed in bee-keeping, for notwithstanding having the benefit of the Journal, with all its learned contributors, and with all my energy, I have not for the last two years obtained honey enough to spread on a piece of bread and butter as big as my hand, and had about concluded not to trouble you any further for the Journal. But your generosity in sending me the July number, and on reading its contents, together with something of a change in the prospect for honey the remaining part of the season, has induced me to add another two dollars to the many already lost in the business I have ever so much delighted to pursue.

I am convinced that much depends on location in the success of bee-keeping. I am situated on the high rolling prairies of Northern Illinois, and notwithstanding my dwelling and apiary are in the midst of eight or nine acres of fruit and ornamental trees, mostly fruit, and of nearly twenty years growth; yet in consequence of so much high cold wind in the spring, that the season of blossoms passes off with but little advantage to the bees, particularly as it has been this season, I could hardly count on one good day for gathering honey while the fruit trees were in blossom, though everywhere the trees were covered with a snowy whiteness.

But I see that my friend Marvin, only about twenty-five miles from me, tells quite a different story, in regard to his bees. His management may be much better than mine, but I am certain his location is better calculated for bee-keeping. Being in the valley of the Fox, his fields of fruit and other pasturage are ensconced by high bluffs on one side, and by natural forests of linden and other honey-yielding trees on the other. I see by the Journal that his bees were swarming on the twenty-fifth day of May, while my best Italians were four weeks later this season.

I had about two acres of alsike clover, which commenced to blossom the first week in June. All that saw it while in bloom, said they never saw so beautiful a field before. It stood up well, and about eighteen inches high, so thick upon the ground that another blossom could hardly be put in without crowding on its neighbor. Whenever the weather would admit, which was but a little part of the time, it was covered with a perfect mass of bees, and honey was brought in by them at a rapid rate.

The white clover is likely to hold out well, as the ground is still moist from the heavy rains The fields are covered with its finest flowers and bees are laying in honey at a good rate.

The Alsike was in blossom about four weeks It is now cut and ready for threshing.

A. Stiles.

Genoa, Ills., July 19, 1869.

[For the American Bee Journal.]

The Season, and the Time of Blossoming.

Mr. Editor :—As you invite communications from all parts of the country, I thought a few words in regard to the condition of beekeeping in this section would not come amiss.

Bees are doing poorly in this coumtry. It has been rainy and wet nearly all the spring and summer. My bees were in a condition to divide when the apple trees were in bloom. The weather came on freezing and cold, and they did not swarm. Then it became milder, and the bees commenced swarming on the 20th of June, and are now nearly through ; at least have finished swarming.

Not a pound of surplus honey has been stored at this date. The weather is now fair, basswood trees are in full bloom, and the bees are doing well on the blossoms.

A subscriber to the Bee Journal asks for the time of honey flowers blooming in different section of the country. I send herewith my record up to the date, beginning in April, and kept in Tompkins county, New York.

April 15, 1869,—Soft Maple in bloom.
April 18, " —Willow in bloom.
May 17, " —Hard Maple in full bloom.
May 22, " —Dandelion.
May 26, " —Black Cherry.
May 27, " —Aple trees in full bloom.
May 28, " —Pear tree.
June 11, " —Thorn tree.
June 15, " —Black and Red Raspberry, good honey plants.
June 16, 1869,—Some white clover.
June 20, " —White clover in full bloom.
July 2, " —Tame mustard.
July 15, " —Milkweed.
July 26, " —Basswood or Linden.

Our next resource is the buckwheat, from which we get half our surplus honey. It blooms in the latter part of August and lasts all through September.

I should like to have beekeepers in different sections of the country, north and south, give the time of the blooming of honey-yielding plants during the season with them. Records of this kind would be of great interest and value to beekeepers, and should be communicated for the benefit of the readers of the American Bee Journal.

D. H. Coggshall

West Groton, N. Y. July 26, 1869.

[For the American Bee Journal.]

Gallup on Pseudo-Foulbrood.

Four years ago this present season, I was traveling down south of here, in this State, and was informed that bees were dying off with foulbrood. One man told me that he had just lost three young swarms with the disease; and, although it was nearly three miles out of my way, I went and made a *post mortem* examination for my own satisfaction. The bees were all dead—*that* fact could not be disputed. And as this season proves to be similar, and as I have received several letters on the subject, I will give a description of, and also a remedy for that kind of foulbrood. The old-fashioned contagious foulbrood I have never had any experience with, and furthermore do not wish for any.

The weather was such that, during the time of wild plum and wild apple blossoms, bees did not store the usual quantity of honey to last through any time of scarcity that might occur, and that usually does occur here the latter part of June. Still they gathered sufficient, from day to day, to raise an immense quantity of brood; and on the last of June, we had seven or eight days of quite cold, cloudy weather, followed by three days of rain, which confined the bees to their hives. I was from home for three days, and, on returning, I found three of my swarms with very strong symptoms of the disease; but I administered the remedy, and it had an immediate effect. The usual symptoms are—*first*, the bees kill off their drones ; next, the immature drones are drawn out of their cells, thrown down on the bottom board, and dragged out in front of their hives. As the disease progresses, the young workers are seen crawling out of the hive and tumbling about in great numbers. Finally some of the old workers die in the same manner. About this time, if we examine the inside of the hive, we find the bees quite helpless and damp; their abdomens distended with, (well, we will call it dysentery;) all the unsealed larvæ completely sucked up by the workers, which have become veritable cannibals; the bottom board covered with dead bees in the pupæ stage, thrown down by the workers; cells full of capped brood, with the caps torn open, and the pieces of the young completely sucked out by the workers. Now, should the weather change, so that the bees can gather honey, the workers will survive; but you will discover that they work very little, and they appear to be troubled with large green flies around the entrance of the hive. If the hive be now opened, a horrid stench will issue, and a putrid mass be seen on the bottom board alive with crawling maggots, and perhaps in the combs too. I have seen hives in this condition, this season, not a thousand miles from here. Understand, that if the weather should not change in time, the workers will all perish. When discovered in the first stages, if you have no honey, administer at least one quart of dissolved sugar, clean off the bottom board, and see that the bees are fed regularly until they can gather for themselves. This is a sure remedy for this disease. No cure, no pay; and any person who allows his bees to get into the last stage of this disease, deserves never to have either bees or honey.

Well, Gallup, this looks about like starvation, instead of a disease. Yes, it appears about as near to starvation as anything that I know of. But, according to my friend, Mr. Puckett's reasoning, it certainly must be a disease.

This might lead to and end in contagious fouldrood. A private correspondent in Tompkins county, N. Y., last year, gave me a very close description of this disease, and wished me to give my views on the question through the BEE JOURNAL. Others have requested me to write an article on foulbrood. To such let this be my reply—The most of my articles are written from actual experience and observation; and as I never have had or seen a case of contagious, foulbrood, I cannot say anything about it. ELISHA GALLUP.

OSAGE, IOWA. July 5, 1869.

[For the American Bee Journal.]

Diminutive Queen.

MR. EDITOR:—Enclosed I send you the "organic remains" of the smallest queen bee I have ever seen. I had hoped to send her to you living, and removed her from a colony on Saturday last (the 17th instant) for that purpose, and put her in a good-sized cage for safe keeping, until I could get a shipping cage ready. But when I came to examine her, a short time after being confined, I found her nearly dead. I tried diluted honey, but in vain; she had concluded to leave this wicked world.

This queen was reared in a cell taken from a full stock, when transferring it to a frame hive. She was fertilized within the usual number of days, and her progeny, which is now hatching out, is about one-sixth drones in worker cells. How is this to be accounted for? Does it not set aside the compressability theory?

I regret very much the loss of this queen, as I should have liked to have had you experiment with her. I have not as yet introduced a queen to the colony from which she was taken, and will not do so until I see whether they will raise a queen from her eggs. I hope they will do so, and that I may get another living smaller one, to send to you.

My bees are doing finely this season. I have increased them from sixteen colonies to fifty-four, all in good condition; and have emptied from the brood chamber (to give the queen a chance to deposit her eggs) about eighteen gallons of honey, with the centrifugal machine—of the working of which I will say more in my next. J. R. GARDNER.

FANCY FARM, NEAR CHRISTIANSBURG, VA., July 19, 1869.

☞The dead queen above-mentioned was received in due course of mail, and is one of the smallest we have ever seen—measuring only eleven-twentieths of an inch in length, and three-twentieths of an inch in diameter at the thorax. She was evidently in all respects in an abnormal condition, and if preserved alive could only have been an object of curiosity, as no valid argument can be based on exceptional cases. We have deposited her in the museum of the Agricultural Department—there to remain until superseded by a still smaller specimen.

[For the American Bee Journal.]

A Case of Self-Robbing.

I awoke at dawn one morning in July and heard a tumultuous humming in my apiary, as though bees were swarming or being robbed. It being rather early in the day for the former, I surmised at once that an onslaught was being made on one of my hives. Hastily dressing myself, I went out and, passing along the stands, found all quiet until I came to a populous colony whose hive was provided with a ventilator at the base of the hinder end, which had been opened a few days before to moderate the internal heat, and was still open. This colony seemed to be assailed in front and rear by a host of bees, all of which were Italians. Great numbers were constantly passing in and out, noisily, like robbing bees, but there was no fighting—no bees being disabled or killed. There was no perceptible commotion or excitement in any of my other Italian stocks, and there were no Italian bees but mine within many miles. Reflecting on the singularity of this occurrence, it struck me that the colony was simply *robbing itself*. I immediately shut the ventilator, and gradually closed the front entrance, having previously opened one of the holes in the honey-board under the cap, to give the bees air while confined. I left them thus for nearly an hour, when, the hubbub having ceased, I found the portico crowded with bees and a large cluster hanging from the alighting board. Another, though smaller cluster, was also gathered around the closed ventilator. The whole seemed quite peaceably disposed, with none of the fidgety restlessness of bees intent on robbing. I now gently opened the entrance, and the bees on the portico at once began fanning and humming, as those long kept from home are wont to do on their return, and none rushed out as robbers do after being confined. The crowd quickly moved forward, entered the hive joyously, in a continuous stream, and were received without the slightest opposition. In a few minutes perfect order was restored and work resumed as usual. I kept the ventilator closed, and there was no attempt to rob the hive thereafter. Renewed attacks would certainly have been made, if the assailants had belonged to some other hive, for robbing bees are not apt to succumb so easily after having effected an entrance.

Has any similar case been observed? And what would have been the result, provided bees from other hives or apiaries could have been kept from interfering?

T. WORDROW.

NOTTOWAY, VA.

[For the American Bee Journal.]

Stimulative Feeding.

As I have received a number of inquiries about bees swarming out or deserting their hives in the spring, it will perhaps be as well to give an article on that subject in the BEE JOURNAL; and at the same time answer another question—"How is it possible to start a queen to breeding, by giving the colony one or two tablespoonfuls of honey or other sweets, every other evening?"

If you have weak swarms in the spring, they should be set to breeding early. For this purpose, take a frame containing brood and eggs from a strong stock, and give it to the weak one. This gives the bees a hint; they begin to feed their queens; and she commences laying immediately. In the meantime stop all upward ventilation from the brooding apartment; see that they have honey or are fed artificially; and they will never desert their hive. The cause of their deserting is, in some cases, the want of honey; in others, too much ventilation; and, in others still, not sufficient bees to keep up the necessary degree of heat to hatch the eggs. But by stimulating or frequent disturbance, a very small quantity of bees can create an increased degree of heat, and hatch out quite a large amount of brood.

Care should be taken not to give a weak swarm too large a supply of brood at the start. If I have any weak swarms, I usually set them to breeding from one to three weeks before setting them out in the spring, by taking a few bees from a strong stock and giving them to the weak. Two or three hundred bees are sufficient for this purpose. A few strange bees coming in contact with a strange queen, under such circumstances, commence feeding her the necessary food, and she will begin to lay in a few days. Of course all upward ventilation must be stopped in the cellar.

You will perhaps wish to know how I get bees from a strong stock without disturbing it. My honey-board is in three pieces. I lay one piece directly over the cluster of bees in one of my strong stocks that has the cap and honey-board off, and the bees will soon cluster on the under side of the piece thus placed. Now, lift it gently and turn it over with what bees are attached to it, and brush or shake them into the stock you wish to set to breeding; and the work is done. There is no danger of getting and transferring the queen; for if the bees have not been disturbed, the queen remains among the combs. I equalize my stocks considerably, in this way, in the cellar, a few days before setting them out.

You will perceive that in this mode you can raise the brood in the hive where it is needed, instead of having to transfer it from another. But if you are used for a bee-doctor among your neighbors, as I am, then, if the brood is not already in the hive, give them a little. But I always prefer to raise the brood in the hive to transferring it from another. We can transfer sealed and nearly mature brood to strengthen a weak swarm, after the weather becomes warm enough. But I do not do so until the weather becomes warm in spring.

Now about that stimulating or feeding the queen. Here comes in some guess-work, and I am Yankee enough to have a perfect right to guess. At any time when a queen is breeding, the bees are continually offering her food; and I suppose it is food prepared by the nursury bees, perhaps similar to that fed to the larvæ. The more they can be induced to feed her, the more eggs she will lay. When a swarm is raising queens and preparing to swarm, they cease feeding the old queen, or paying her any attention. Consequently she ceases egg-laying at least partially; otherwise she would not be able to fly with her subjects on their intended journey. There are exceptions to this rule; but with me they have been rare.

At any time in the summer, when there is a scarcity of forage, the bees stop feeding their queen; and she consequently stops breeding. In the fall or winter, they do not appear to pay any attention to their queen. When she is hungry, she has to eat honey like another bee, or like a young queen not yet fertilized, which is left to supply herself from the common stores; but as soon as she is fertilized, they commence feeding her. For this reason it is sometimes a very difficult matter to introduce a strange queen in October, or at any time when bees are not raising brood. Mr. Thomas' plan would fail nine times out of ten, in October. Four years ago, I failed three times out of five, with Mr. Alley's plan and the tobacco smoke. A colony or stock deprived of its queen at that season, does not appear to discover its loss under from five to ten days.

The reader will find that a very small quantity of food administered regularly, induces the bees to feed their queen, and this causes her to lay eggs, more or less freely, according to circumstances. But when the queen has entirely ceased laying, as was the case last seeson, and honey is then again gathered late, the bees do not feed their queen, and she consequently does not re-commence laying. It is frequently the case even in summer, that a stock which gets rich with stores, ceases paying attention to its queen; while another stock, standing by its side, is brooding rapidly. By drumming out those bees, or disturbing them by taking out a comb and inserting an empty frame for them to fill, they will be impelled to feed their queen and stimulated to activity. I work on the principle that this theory is correct; and the results are sure to follow. Of course I have no method of knowing that it is chyle or prepared food that is fed to the queen and induces her to lay; and I have never seen anything on the subject from others. Mix up your bees, or "punch them up," as Novice says, when you want them to breed.

E. GALLUP.

OSAGE, IOWA.

None except the mother wasps or mother hornets survive the winter. The new colonies are founded solely by the mother.

[For the American Bee Journal.]

Alley's New Style Langstroth Hive.

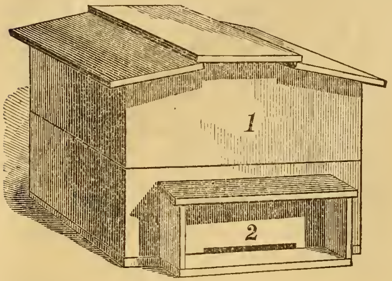

FIG. 1.

The above cuts represent the New Style Langstroth hive, which I have before described in the BEE JOURNAL.

Fig. 1 shows the outside cover or cap, which covers the surplus honey boxes and brood-chamber, and is weather-proof both summer and winter.

This hive is so arranged that it has perfect ventilation; and bees, when at work in the boxes, will not leave them during the hottest weather—thus giving this hive the advantage over all others in use. During the warmest weather in the summer of 1868, my bees kept at work in the boxes; while the bees in all other kinds of hives were clustered on the outside, leaving the boxes entirely empty. My bees at that time collected honey rapidly, and stored quite a quantity, which they would not have done had they been in boxes like those of my neighbors.

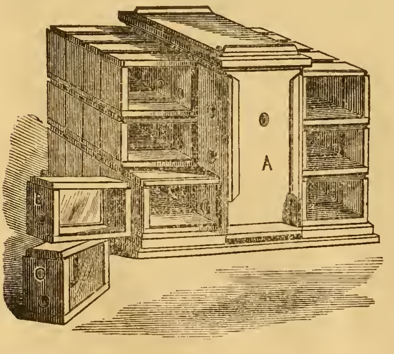

FIG. 2.

Fig. 2 shows the brood-chamber and arrangement for the surplus honey boxes.

The boxes, as I have before stated, are placed on the sides, and the combs in the brood box run from side to side, and *not* from front to rear, as they do in all other movable comb hives.

Thirty-six boxes can be placed in the hive at one time, and each box has an entrance one and three-fourths of an inch in diameter. No boxes are placed over the frames, as it would be too far for the bees to *travel* in order to reach them. Besides, I think thirty-six three pound boxes are as many as any good colony can fill in one season, unless the seasons are much better than we have had them in my experience, here in New England, since I have kept bees.

The brood-chamber has room for ten frames, and has the same number of cubic inches inside as the shallow form Langstroth hive.

These hives will winter a stock of bees, without extra preparation, better than any other hive in use. They can be better ventilated than any hive yet constructed, without having a draft of air up through the bees or the brood box. The sides of the brood-chamber, having eighteen one and three-fourths of an inch holes in each, and a movable top or honey board, it will be seen at once that the entrance can be closed, and holes for ventilation made in the outer case, near the top, or anywhere to suit the fancy of the bee-master.

I know of one man who wintered a stock of bees in this kind of hive last winter, and all he did to prepare it was, to remove the top of the brood box and place a piece of woolen carpeting over the frames. This spring it was the best stock of bees he had.

These hives have the space between the frames and sides of the hive (as is the case in all good movable comb hives) admitting that *cold draft* which some of your correspondents, who have an interest in close-fitting frames, do not think a good thing. Now I consider *that space* one of the best features about Langstroth hives. Who ever saw an old box hive that did not have room for the bees to pass through between the ends of the combs and the sides of the hive? This story about the *cold draft* of air will do for some beekeepers to believe; but with those who know what a good hive is, I rather think it will not go down. The new style hive has a deep frame, and most of your correspondents admit that deep hives will winter better than shallow ones.

The honey will always be found above the bees in winter, which is another good feature in this hive, if we can believe what we read in the BEE JOURNAL about some of the famous patent hives offered for sale. Then, again, it will be found on examination of the new style hive and the shallow hive in March and April, that the former has *at least* one-third more brood than the latter, with the same quantity of bees. I examined fifty stocks of bees in shallow hives last spring (and many of them were larger colonies than any I had), but not one of them had as much sealed brood as mine. The brood-chamber being inside of a case or house, and the ventilators closed, no heat can escape, except through the entrance. The access to the boxes is so clear that the bees find themselves in them before they are aware of it. I know that it seems most natural for bees to work in boxes first, when placed above the brood; but it is a little curious that my bees commenced in the bottom tier of boxes first. In fact, they had them almost full before I was aware that they had entered them at all. They had the top tier to go into first if they chose; and there I was looking for them every day.

That bees will work in side boxes, as well as in those placed over the brood, is a fact well established in my mind; and if any of the readers of the BEE JOURNAL doubt it, let them test one of my new style of hives, and it will not take more than one season to convince them of the fact.

I know that some will object to this hive on account of the cost; but they can be made for about one-half the money I sell them for. When I make a hive I intend to make a good one, and must of course have a good price for it. In this part of the world lumber is very high, as well as everything else. The surplus honey boxes are what makes this hive cost so much more than some others. Thirty-six boxes with glass sides, is what I use with this hive; but it should be remembered that any kind of a box can be used on this hive, and any number from two to thirty-six at one time.

Those who raise honey for market, should use the small boxes, as it sells much more readily in them, and at prices much higher.

Those who use the honey machine will find these boxes very convenient to use, as the glasses can be slipped out, the caps removed, and the honey thrown out, without injury to the comb or box; and the same comb can be used year after year.

Another good quality of this hive is this—the frames can be taken out of the brood-chamber, without having to remove the surplus boxes; and this one feature alone is worth half the price of the hive.

The sides of the brood box can be removed at pleasure; so that those who think it a better plan, can place the surplus boxes within one-fourth of an inch of the brood. The outside case is in two parts, as shown in figure 1. The bottom portion I seldom remove; but the top must be removed in order to reach the boxes, and see the bees through the observing glass in rear of brood chamber. The hive is made in several parts, but each piece is held firmly in place, so that the hive can be transported as well and conveniently as any other. I have sent them to Pennsylvania, New York, Ohio, New Hampshire, and all went safely.

This hive has all the good features of the Langstroth, and all who use them will have to pay Mr. Langstroth, or the owners of his territory, for the right. Persons who send to me for them, should understand this, and act accordingly.

Mr. George O. Tompkins, of White Plains, New York, wrote me, sometime in June last, that he had one hive of bees at work in all thirty-six boxes. Bees have done so poorly here, this season, that I cannot make a good report of these hives this year; but hope to be able to do so another season.

H. ALLEY.

WENHAM, MASS.

[For the American Bee Journal.]

Replies and Comments.

Querist number 6 asks seven questions which he regards as practical ones, and desires practical and philosophical replies.

> "1. Some beekeepers take the position that natural swarms will gather more honey, build more comb, and have more brood, during the first week after they are hived, than artificial ones. Is this true? And, if so, why?"

I most assuredly take the affirmative on this question. The reasons why the bees gather more honey and build more comb in the natural swarms than in artificial ones, is simply because when we make artificial swarms, we universally transfer some combs which are the full size of the frames, reaching throughout the length and depth of the hive; and these combs cause the bees to cluster in an unnatural manner, to keep the brood warm, in consequence of the comb being so large. Did ever anyone know a swarm of bees to commence and build a single comb from top to bottom in a common full-sized hive, and then go back and build another single one? It cannot possibly be done. They commence quite a number, and build them all downward together, because they then can and do receive the benefit of the animal heat generated in the cluster, and which they must have to build comb. The first and highest law of nature in insects, as well as animals, is self-preservation in caring for the offspring. The honey bee seems to be endowed with this instinctive impulse, for the purpose of preserving the brood in the hive. Now it is certainly evident that if the combs that are transferred from the old hive at the time the artificial swarm is made, contain brood (and they generally do), the bees will cluster on them, for the purpose of saving the brood from destruction by chilling. This causes the bees to cluster in an unnatural manner. If your hive was an oblong square perpendicular, say eighteen inches long, and you had means by which you could take the combs to pieces in lengths of say six inches, and insert them in the top of the hive where the animal heat (which they must have) naturally ascends, then the bees could and would approach a perfect natural cluster in form, and the heat could be economically used. Otherwise, if the combs reach from top to bottom of the hive, say from nine to eighteen inches deep, perpendicular, the time of perhaps every bee in the hive will necessarily be taken up in trying to keep the brood from chilling, owing to the unnatural position of the combs, and the open space to the side. Hence no bees could be spared from the lower ends of the combs (on account of the brood chilling) to go to the top of the hive and build comb there; nor could any be spared to go out to gather honey, out of which to make comb.

All close observers understand this principle in the management of bees: if you have a small swarm in too large a hive, it will not build so much comb, gather so much honey, nor do so well generally, as the same swarm would have done had it been placed in a hive of cubic contents proportionate to the number of bees. Now the reason is simply because the bees are unable, in so large a space, to generate heat and keep up the internal temperature required for their prosperity. This last observation is made for the purpose of showing the vital importance of animal heat and its economical use, for the greatest prosperity in artificial swarming, when combs are inserted the full size of the hive Again, is it not evident, if the bees cluster from the top to the bottom of the hive, in order to cover the brood at the bottom, that the animal heat will ascend to the top, thus passing away from the cluster? Hence the artificial colony lingers, while the natural swarm does not.

There is one other reason. It is this. All artificial swarms should have the swarming propensity excited at the time they are being made. When that is done, and the combs properly arranged in the hive, there remains no other reason why an artificial swarm will not gather as much honey and build as much comb as a natural swarm will, in any given time. The swarming propensity produces a wonderful effect in causing bees to work with energy.

> "2. Suppose we have, at the beginning of the honey harvest two colonies in the same apiary, each having twenty or thirty thousand bees—the same number of young and old; the same amount of worker and drone comb; a fertile queen equally prolific; the same quantity of honey and bee-bread; in the same style of hive; managed alike in every respect; and one gathers fifty pounds of honey, and the other seventy-five pounds. What should cause the difference? Who can give the solution?" &c.

The answer is, in and in breeding. How many beekeepers have bought a single hive of bees to get a start; or have found a swarm clustered on some shrub or some branch of a tree; or perhaps have found a colony in the hollow of some forest tree; and have thus managed to get their start from a single stock? Perhaps there may not have been another hive within two or three miles of this one. His bees multiply rapidly for a term of years, and increase until his apiary contains fifty or a hundred hives. Then comes the certain, sure and inevitable retribution. Ten years or perhaps less have passed, and how many hives of bees do you suppose he has? The answer is, from seven to twenty. Now why is it? The same man knows perhaps that if he should take a stock of hogs, sheep, or even chickens, upon a farm, and not change them in some way to prevent in and in breeding, the stock would run down, until they would have no physical or constitutional ability to live and multiply profitably. The inevitable seal of nature is stamped upon in and in breeding, in insects and animals as well as the human race; the penalty being eventually, if persisted in for several generations, utter and entire destruction.

In the case alluded to, where a difference of twenty-five pounds of honey is made, in profit to the owner, in the hive containing the queen whose progeny failed to produce as much honey as the other, was caused by the constitutional vigor and ability of the workers to perform the labor being *non est.* The queen of this colony, through all her previous generations may not have violated the law, until in the act of her own fertilization.

The next three questions seem to be directed to Novice and Bingham.

6. Except by the absorption of the sun's rays in early spring, there can be no reason why bees would be more contented in a hive of dark color than in a white one.

7. As a general rule, bees never decamp because the queen is removed from the hive, if they have the means to produce another, and their hive has not too much upward ventilation, and be not disproportionately large, leaving an undue amount of vacant space. They almost invariably build drone comb in the absence of a fertile queen. J. W. SEAY.

MONROE, IOWA.

P. S. In an article written by me, on page 139, volume 4, first column, line 39, for *rest* read *risk*, and in the same line for *queen* read *owner*. The article should also be signed J. W. Seay, instead of J. W. Leay.

[For the American Bee Journal.]

How I Found a Black Queen.

One of my hives contained one frame of Italian bees, with brood, eggs, honey, and a fertile Italian queen. Another hive contained a full black colony, with a fertile black queen.

I wanted to find the black queen, and substitute the Italian queen; but could not find the former, after a search of three days. Being a Yankee I invented a plan. Making a few Italian bees my agents, I found her by application of the legal maxim—"*qui facit per alia, facit per se.*"

Exchanging their stands when the black bees were flying freely, I threw one-third of the black bees into the Italian hive, where I had caged the Italian queen. A few Italian workers were, by the same operation, thrown into the black colony, where they immediately formed a prison cluster about the black queen. Removing the cluster, the remaining operation of uniting my Italian nucleus and the black colony was easy enough.

A CHICAGO BEGINNER.

CHICAGO, Aug. 13, 1869.

[For the American Bee Journal.]

The Italian Bees on Red Clover.

MR. EDITOR:—If others who have Italian bees, and red clover fields around them, and do not find them working freely on the red clover, surely their bees, soil, or clover, must be different from mine.

I have the large red (perhaps some would call it the large Dutch) clover, mixed with the alsike; and the common kinds of red clover grow on my neighbors' lands.

Now any day since these began to blossom, when I take pains to observe, I see a portion of the bees working on the red clover, although the alsike and the common white may abound all around them. J. W. TRUESDELL.

WARWICK, CANADA, July 30, 1869.

[For the American Bee Journal.]

A Queen Mating Thrice.

Mr. Editor:—On the 12th day of July, instant, one of my hives of bees swarmed, and returned to the hive after partly clustering. Thinking the queen was probably unable to fly from the hive, I took out the frames and shook most of the bees into an empty hive; then examined the combs and satisfied myself that there was no queen on them. My artificial swarm remained quiet for awhile, but finally all returned to the old stock. On the 20th this hive swarmed again. On the 21st I opened the hive, and found two queens in it. I took out one comb with queen and bees, and put it in an observing hive in my bedroom window. On the 25th, at about 3 P. M., I missed the queen, and at ten minutes past three, I saw her come back, but with no signs of having met a drone. At seventeen minutes after three she again went out, and nineteen minutes afterwards came in, with a whitish mass, about half the size of her head, attached to her tail. This was soon removed by a worker, and carried out of the hive. Next day, the 26th, I saw this queen go out again, at fifteen minutes after four P. M.; and twenty minutes after, she again came in, with the parts of the drone attached. The bees gathered around her, as before; and one of them, taking hold of the object, pulled it away and carried it out. On the 27th, about four o'clock, a commotion was observed among the bees, and on examination it was found that the queen was again absent. I took my station in front of the hive and watched it closely. In about twenty-nine minutes from the time the queen was missed, I saw her come in with the signs of copulation precisely as in the two former cases. The bees gathered around her; one laid hold of it, pulled it away, and carried it out.

Mr. J. T. Langstroth, in the January number of the Bee Journal, says that when impregnation is one effected, we have no reason to believe that any subsequent copulation takes place. Now I can see no reason to doubt that impregnation of this queen took place on each of these three occasions. Any person seeing her could not fail to notice from her actions that some important operation had been performed upon her. For, as I suppose, an hour after each copulation, she moved slowly and with her body drawn up, as if feeling very uncomfortable. After this experience I must say that the modes yet devised of securing pure impregnation appear to me questionable, if not worthless.

Thomas C. Hill.

Sydney, C. B., July 28, 1869.

It is well-known to breeders of poultry, that the fertility of a hen decreases with age, until at length she may become entirely barren. By the same law, the fecundity of the queen bee ordinarily diminishes after she has entered her third year.—Langstroth.

[For the American Bee Journal.]

Queens Mating Twice.

Mr. Editor:—When I wrote my first article on this subject, I had no other motive than to get at facts and to advance bee-culture. At that time I was not raising queens for sale; and I would not have written to the Journal then, only for the request of Mr. Langstroth.

Mr. J. E. Pond, Jr., must not have read my article very carefully, or he would not have understood me to say that queens go out to meet the drones *after* they *commenced laying* eggs. I never said so, nor do I say so now; for I do not believe they ever leave the hive for such purpose, or ever mate with a drone, after they commence laying. But I am still of the opinion that they do *sometimes* mate with more than one drone; and I will so believe until it is satisfactorily *proven* that they do not.

I do not wish to deter anyone from purchasing Italian queens. On the contrary, I am trying to induce all I can to purchase; and I wish everyone that keeps bees would have no others except Italians, for then we would have no trouble in keeping them pure.

Mr. Pond says—"The allwise Creator has designed that among bees impregnation should take place high in the air, in order probably to guard as much as possible from in and in breeding." Would it not be a more effectual way to *cross*, if they were to meet two or more drones? If the allwise Creator devises means for them to find their way home safely one time, and knows it is necessary that they should go out a second time, He can easily enable them to find the way home safe a second or a third time. Mr. J. L. McLean thinks this doctrine is only a shrewd *invention* of *queen-raisers*, to *humbug* their customers and sell spurious queens. So far as I am concerned, I *guarrantee all* the queens I sell, and tell my customers that if at *any time* the queens purchased of me should fail to produce workers with *three* stripes, I will, when notified of the fact, send another *free* of charge. Does this look like humbug?

Mr. McL. thanks Mr. Langstroth and Gallup for entering their *protest*. As I said above I wrote my first article at Mr. Langstroth's request. Mr. James T. Langstroth says, in one of his articles, that he has observed queens coming in *more than once*, bearing the signs of having mated with a drone, but were impregnated by only one. But he does not produce any *evidence* that they were *not* impregnated more than once.

As for Mr. Gallup, I think he *gallops* around after us all oftentimes just for argument's sake; and I am glad too that he does so, for he keeps things stirred up, so that he keeps us all *awake*. Thanks to the galloper.

When Mr. Pond, or any one else, *proves conclusively* that my theory is incorrect, I will then give in.

H. Nesbit.

Cynthiana, Ky., August 9, 1869.

[From the Prairie Farmer, Aug. 14, 1869.]

Pure Progeny and Hybrid.

I have a colony of bees, the queen a pure Italian. I think she mated with a black drone, although there were Italian drones. She is a year old, and I had clipped her wings, for fear she might steal a march on me, and leave. I use a movable frame hive.

On the 19th of July, they sent out a swarm, but as the queen could not fly, they went back, and I captured her and gave her to a black colony I had just bought. I opened the hive and destroyed all the queen cells but one. On the 30th they sent out another swarm. I opened the hive and cut out the queen cells, and put them in a small box; and in fifteen minutes there were eight young queens out of their cells, and crawling around the box. Two of them were as fair Italians as I ever saw; two were apparently pure black bees; and the others were unmistakably hybrids. What was the cause of the difference?

Eli Phillips.

Coles Co., Ills.

[From the London Gardeners' Chronicle.]

Eastern Melilot or Bokhara Clover.

I have received seed of this form of white clover from the East, under the names both of Bokhara and Cabool clover. It is longer in its stems and foliage than the British species, frequently growing as much as four feet in height. Its flowers are if anything smaller than those of the *Melilotus alba*.

Having grown of this, I find it to be greatly resorted to by the bees, which would seem to be as much attracted by the strong smell of the foliage, as by the scent of the flowers. The flavor of the whole plant is due to the same principle as that of the *Anthoxanthum odoratum*—sweet vernal grass, a grass principally concerned in imparting fragrance to good meadow hay. The principle is called by the chemists *Cour marine*, and is the volatile oil that gives fragrance to the Tonka bean.

I have grown this Melilot in my mixtures of seeds or artificial grasses, with the view of imparting to them the flavor of meadow hay; and in as far as my experience has gone, I have found such hay to be both more relished and more nutritious. I mixed about a quarter of a pound of Melilot seed with the seed of each acre of clover, or mixed clover and grass seed. The bee-master then, who farms, may improve his artificial fodder, while he provides for his bees through the medium of Melilot. B.

May 29, 1869.

No hive which does not furnish a thorough control over every comb, can give that substantial advance over the simple improved or chamber hive, which the bee-keeper's necessities demand.—Langstroth.

[For the American Bee Journal.]

Gallup's Notions Considered.

"Our friend" Gallup reminds me of an anecdote I heard when a boy. A cat (not the "tomcat," but that other kind of cat), asked the lioness how many times in the year she had young? The lioness replied but once. "How many at a time?" says the cat. "But one at a time," says the lioness. "Pshaw!" says the cat, "that's nothing. I have young four times a year, and four or five at a time." "Well," says the lioness, "they are nothing but cats, after all."

In my article referred to by Gallup in the August number of the Bee Journal, page 27, I had reference to what he said about the dysentery, in the January number, page 145. I had no reference to his management of his bees; for if we are to believe *what he says* about that, of course his bees are all right, and "know better than to have the dysentery." But, mark you, what he said. He started out by saying there was no such disease; and then went on to tell what produced it, and how to prevent it, &c. I would like to know, if there is no such disease, how it can be produced. I should think it was a disease, after it was produced; but Gallup says it is not, and it is—both; so you can believe which you please of his statements.

Again, Gallup says that bees do not make honey! Well, suppose they do not, does that prove that there is "no such disease as dysentery?" But let us see if they do make honey? I say they do not make honey, but gather it. Gallup says they "do make honey," and then refers me to the "maple sap," saying that the bees have to gather twelve drops of sap to every drop of honey. At those rates, on a fine day, a large colony would have their hive full of sap before night, and would have to hold on for want of storage room, and wait until night to reduce it to honey. Does any sane man believe any such stuff? No. Gallup himself does not believe it, I suppose. It is one of his "doses," given merely to see "what effect it would have." There is no person who ever paid any attention to the way bees sip at maple sap, but knows that they do not take it up in its watery state, and carry it in their hives. They are a long time getting what they carry away, and are very particular to crawl around where it is merely wet, and where the wind has reduced the sap to much less than twelve to one, and there extract what sweet they carry off.

Our friend Gallup asks me to answer, through the Bee Journal, whether the maple sap is made into honey by the bees, or does the sap make itself into honey? Well, Gallup, neither one of your questions is true. The bees do not make the sap into honey; nor does it make itself into honey. The bees gather a portion of the sweet from the maple sap, the same as they do from different flowers. As for Gallup's great discovery that bees mix "a portion of their saliva" with the honey they make from the maple sap, to keep it "from granulating." Of course it is so with Gallup's bees; but I doubt very much whether my bees have that power—though they may have, for that is a very nice point to detect; but Gallup is "tremendous" on these mysteries of the honey bee.

Gallup says that bees do make a very nice article of honey from maple sap, and then, to prove it, says—"reduce sugar syrup quite thin and feed it to bees in July or August, and they will make it into thick honey." Well, friend Gallup, bees do not, in this part of the country, work very much on maple sap in July or August. Maple generally flows most here in the spring of the year, when it is fully as cool as it was any time last fall when the bees were gathering that thin honey.

If bees can gather "maple sap" that contains only one drop of honey to every twelve drops of sap, and reduce it to a "good article of honey," could they not, by the same law, reduce the thin honey that our friend Gallup says they gathered last fall, and which gave them the dysentery, or the disease that he says don't exist? Friend Gallup says he would like to say much more on the subject of dysentery, but his "dose" was large enough for "friend Puckett." Friend Gallup's "dose" puts me in mind of a quack doctor I once heard of. The story is thus: He was called in haste to visit a child that was very sick; but being unable to detect the cause of the trouble, he went to work and prepared a "dose," by taking some of all the medicines he had, which made a large "dose." He was about to administer it to the child, when the anxious mother remarked—"do you think, doctor, that this 'dose' will cure my child?" "*Cure* your child!" replied he, "why no, but it will throw it into *fits*, and I am h—l on fits!" But as I never take friend Gallup's "doses" as he prepares them for me, I get clear of his "fits."

Now, friend Gallup, as you have much more you want to say on the subject of "dysentery," I refer you to your article in the February number of the Bee Journal, page 145, where you say there is no such disease. Is it, or is it not a disease? This you can answer without making your "doses" so very large. But never mind the size of the "dose," only confine yourself to the proper material of which it is composed. There is one prominent article in all your "doses" that might be left out, and the "dose" act fully as well, at least on me. The "*my*" and the "*I*" might be left out, until there are more indications for their peculiar action. But if the "dose" is merely prepared "to see what effect it will have," regardless of the life of the patient, you need not offer it to me, as I will not take it until I analyze it; and then, if there should *happen to be any good* in the compound, I may take it—if I need the article.

Is there, or is there not, such a disease among bees as the dysentery? Gallup's bees, of course, excepted—they "know better."

B. Puckett.

Winchester, Ind., Aug. 1869.

How oft, when wandering far and erring long,
Man might learn truth and virtue from the Bee.
Bowring.

[For the American Bee Journal.]

How to Save and Clean Alsike Clover Seed.

Mr. Editor:—In the last number of the Bee Journal, I noticed an article from the pen of Mr. Nesbit, of Cynthiana, Ky., in which he requests those having knowledge in regard to saving and cleaning alsike clover seed, to communicate through the Bee Journal. I have had quite a number of years' experience with it, and will freely give it for the benefit of those having seed to save.

I let my alsike stand about two weeks longer than I should for a hay crop alone, as until a majority of the blossoms have turned brown or dark (which here, in Canada, is about the last week in July), then, if the weather is fine, I cut it one day and draw it in the next. It does not do to let it get too dry, as it shells out badly when very dry. Then, early in the winter, so that I can have the hay to feed after it is threshed, I get a clover thresher, the same as is used here for threshing red clover. These are taken from one farm to another, by men who make a business of threshing clover, the same as other men do of threshing wheat and oats. A machine will thresh from twelve to twenty bushels in a day, charging fifty cents a bushel for threshing. The seed comes from the machine separated from most of the chaff. In this state it is left by the thresher, for the farmer to clean fit for market, which is much the most difficult to do, and is often not done at all, but the seed taken to market as it is, full of dust and dirt; as was undoubtedly the case with that which friend Nesbit and others got from various sources.

My plan for cleaning the seed is this: I pass it through my through my fanning mill and blow it hard. A portion of the seed comes down under the mill into the chess or seed box, and a portion is blown over with the dirt in front of the mill. That I take up and put through the same as before, and repeat it, until all comes down into the seed box. Then you have it clean from dirt and dust: but there will be fine bits of hay or any other seed that may be mixed with it in it still. These I take out by means of a fine wire sieve, that will, with considerable shaking, let the alsike seed through, but retain all of the broken hay and any other seeds larger than the alsike. This part I do by hand, and it is quite a labor to sift a hundred or two hundred bushels of seed, as I have done, and shall do again this winter, if spared. But I have the satisfaction of selling the *pure alsike seed*. Parties cleaning the seed *for their own use*, if there be no other seeds in it, might dispense with the hand sifting, as for their purpose the bits of hay would not hurt it in the least.

This has been a bad season in Canada for bees. There is not much surplus honey, and stocks will not be in first-rate condition for winter. But they would have been much worse, if it had not been for the alsike clover pasturage.

H. M. Thomas.

Brooklin, Canada.

[For the American Bee Journal.]

Large Growth of Alsike Clover.

I have to-day sent you a sample of my alsike clover. It measures six feet seven inches in length. I have a remarkable heavy crop of it this season, from which the bees, (both native and Italian) extract honey as readily as they do from the small white clover. I am saving it for seed, and it consequently affords a large amount of pasturage for my bees. It has been in full bloom for four weeks, and will be for a week longer, before it will be fit to cut for seed.

There is a farmer about one mile and-a-half from my place, who sowed a large field with alsike for pasturage for his stock. I have visited the field a number of times, and always found it grazed down to about the height of white clover, but still producing a multitude of blossoms, and literally swarming with bees. I think, if it is not grazed down too short, it will blossom until fall.

Bees have not done as well as usual here this season, on account ot it being so wet and cold.

H. M. Thomas.

Brooklin, Canada, July 23, 1869.

[For the American Bee Journal.]

Size of Hives.

Mr. Editor:—There have been some things written in the Bee Journal, in relation to the size of hives; and I wish to refer to a few of the statements.

Mr. Gallup says that it is an established fact that hives should not contain less than two thousand cubic inches. Mr. Bingham says that in the latitude of New York, where the honey season is short, a hive containing less than two thousand cubic inches would be unsafe, &c. D. C. B. thinks that two thousand cubic inches is not enough, but inclines to adopt twenty-four hundred, where no buckwheat honey can be made.

Neither of these writers give any reason for their statements. According to my view of the matter, the reason they would probably assign for a hive of that size, I should give for having a hive of smaller size. Will bees make much more box honey when the hive is two thousand or more cubic inches capacity, than in one, say, of a cubic foot? Of course they must be longer in filling a large hive than a small one; and it follows that they will have less time to work in boxes. Will not a hive containing seventeen hundred and twenty-eight inches, or a cubic foot, be sufficient for store honey and brooding space? According to my experience bees never die of starvation, in this section, in such a hive, other things being equal. In the spring of the year, when the brood space is empty, I think there must be room enough for the queen to operate in, and the bees will have less comb to cover and protect. If this be so, what is the use of from three hundred to six hundred cubic inches more of space? Why not reserve such space for box honey? If I recollect right the German bee-keepers recommend only about twelve hundred cubic inches. I have had hives of that size that have done well—so well, that I am inclined to think that even that size of hive will do.

I should like to have Mr. Gallup tell us *why* "every hive should have about two thousand cubic inches in the breeding apartment."

Charles S. Paine.

Randolph, Vt., July 25, 1869.

[For the American Bee Journal]

Coal Oil for Bee Stings.

Mr. Editor:—I have a new remedy for a bee sting. A gentleman removing from Southern Illinois, this spring, told me that coal oil would cure the bite of a rattlesnake, by bathing the bitten spot with it.

I applied the oil to a bee sting, and it gave me immediate relief. A few days after I had a little boy stung on his knee. His mother applied coal oil to it, and the boy immediately quit crying. Sometime afterwards, a party removing was detained at my house by high water. Two of the small children went to the bee gums, commenced fighting the bees, and were stung all over. I do not know how many bees stung them; but suppose not less than fifty, probably more. We wetted every place with coal oil; and as soon as this was done, they ceased crying and did not seem to suffer, nor did any swelling follow.

One of my neighbors has also tried it, and reports that it was a perfect success.

I am well pleased with your invaluable Journal, and cannot do without it.

Peter Brickey.

Jones' Tanyard, Mo., Aug. 8, 1869.

[For the American Bee Journal.]

Is Tobacco Smoke Injurious to Bees?

I should like to ask whether tobacco smoke is injurious to bees? I think it is to a certain extent. As far as I have seen, if anyone will put on some sort of protection for the face and hands, he will have no need of smoke. The first reason I have for thinking that tobacco smoke is hurtful, is this, that to a great extent it stupefies the bees, and this generally at the time of the day when they need all their force for gathering supplies. Now it must take them considerable time to recover from its effects, which I consider would be better spent in gathering honey. In the second place, I think that, in order to get them quiet enough to handle, you are in danger of smothering the queen, or at least of injuring her very seriously. I think that any other smoke has the same effect to a certain extent.

I also find that it makes my bees cross, as they will not let any person go near them for two or three days after.

Geo. T. Burgess.

Lucknow, Ontario, Canada.

[For the American Bee Journal.]

Argo's Proposal.

Mr. Editor:—I proposed a report of this season's operations with bees, for the September number of the Journal, in comparison with Novice, but as the quantity of cap honey, as well as the increase of stocks, was to be included, I shall have to defer it until October, from the fact that I have not taken off all the caps yet. I keep an exact account of all honey taken, as it will be as interesting to myself as to the readers of the Journal, to know what bees can do in a good season, mostly of themselves, as I did not do much to assist them. I was in bad health all the season, and made only two artificial swarms; which were merely started as nuclei, with two frames and a partition board, to raise queens. As soon as the queens were laying, I filled out the hive at once with frames of brood from the other hives.

I am pleased to see Novice maintain his enthusiasm and perseverance, and glad to hear of his success up to the 5th of July. And as he accepts my challenge with a good will, this will not be considered as my report. He suggests deferring the reports until April, so as to include our winter's experiment, and as I have no fears on that head, from my great success in wintering, I most cheerfully accept his suggestion. If he wishes to leave the honey out of the report, and confine it mainly to the increase of stocks and wintering, I accept that also.

He had only eleven stocks, and I had only twelve at home, one stand being a mile off—due allowance will be made for that. He says he only had comb for about thirty stands in all. Well, that is more than I had, for when my stocks had gone up to twenty-eight, my last comb was used. All from that time were put in without combs; or merely taking a frame or two from other stands as guide combs.

Up to July 7th, I had fifty-two stands; and, but for want of hives, I should have had fifty-nine—having turned seven swarms back. The one of the 7th would also have been turned back, but for the extra large size. It was a maiden swarm. While it hung on the limb, only two feet above ground, I hastily repaired an old gum for its accommodation. The maiden and late swarms were larger than the prime swarms; and if I had had frame hives I could have saved them all. Some will say, how foolish to let them swarm so much. But it must be remembered that my aim was the increase of stocks, if the season was good; though I was far from expecting such an increase as this. I cared for no more honey than enough for family use, if I could only increase my stocks to thirty-six, to begin the next year with. I have already sold over 220 pounds of honey; and to guess at the balance in the cellar and yet on the stands, it will be somewhere about 400 pounds in all. This would be equal to three swarms, and thirty pounds to each of the thirteen old stands. Each stand is in good condition for winter, except the last three or four, which may require a little feeding. Next season I do not expect to allow more than one swarm, and intend to try Quinby's non-swarmer; as honey is the main profit in bee-keeping here. People will not buy bees or queens; so the apiarian must depend on honey as his only profit. It always finds ready sale here.

I did not commence raising queens this season until about the 15th of May, as I did not want to weaken any of the stands by taking away bees. I thought they were weak enough until they commenced swarming. I raised very few queens this summer, and not one of them commenced laying until June. I think if I had had a strong stand, from which I could have raised queens in April, and used them to make artificial swarms in May, I could have done still better. But other and more urgent business, and bad health, prevented more attention to my bees than just to hive them, put on and take off caps, and see to the ventilation in hot weather.

My greatest mortification in the spring was to find that I had only one pure Italian queen left, though about one-half of the twenty-six stocks last summer were pure. In wintering last fall I had but little leisure, and therefore did not take time to hunt up and cage the pure queens and destroy the others, which would have well paid for the trouble. Now I have to put pure queens in all, for I am not satisfied with hybrids and prefer the pure stock. I succeeded this season in getting pure queens in about twenty-six stands, but about two-thirds of these were not purely fertilized and produced hybrids. Now, as very few black bees are within three miles of me, this is very hard to account for, unless drones of hybrid queens are impure, as several apiarians allege. But what surprises me still more, is this: Two second swarms, hived the first week in June from hybrid stands, have now turned out as pure Italians as I ever saw—not a black bee among them. I can only account for this on one or the other of two suppositions. A queen reared from a hybrid queen, mating with a pure drone, will produce pure workers. Or, if this is not correct, can it not be that one of the young pure queens was out on her excursion to meet the drones, when the swarm came out, and in returning got mixed with it, settled with them, and was accepted in preference to their own queen. If neither of these suppositions be admissible, will Gallup or Thomas, or some more experienced hand, give the explanation. I am not mistaken as to the stands these swarms came from. I am also certain that they did not mix with other swarms. I have all my stands numbered, and keep an account of them all.

Novice proposes to keep all his stocks on their summer stands next winter. If he will read volume 4, page 109, of the Journal, he will see a plan that has been tried successfully further north than where he resides. That plan does differ from mine on the opposite page, 108, only in this: I shelter and protect the outsides with straw, only leaving the fronts exposed to sun, and fronting south. But as I have lengthened out this so far, I will reserve further remarks on wintering for another number.

R. M. Argo.

Lowell, Ky.

[For the American Bee Journal.]

A Letter from Windsor County, Vermont.

Mr. Editor :—By your permission I will give the readers of the Bee Journal a short statement of how the bee business stands in this section. There are only a few persons in this county that keep upwards of fifty stocks. Probably there are more than three hundred owners of bees, and a majority of them do not know a queen from a drone. We have only a few practical bee-keepers here. They of course use movable comb hives, make artificial swarms, have Italian bees, and make bee-keeping a paying business. Langstroth's hive is the principal movable comb hive in use about here. However, a few of K. P. Kidder's hives are scattered about here and there; but those that use them soon get sick of them.

I have thirty swarms of bees. A majority of them are in Langstroth hives, and I shall transfer the rest into them next spring. Bees did very well about here until the 1st of July. Since then they have hardly held their own. Unless we have a favorable fall, black bees will generally be in poor condition for winter feed.

Bees swarmed here generally from one to three times, and some four times. I had only four stocks that cast off swarms, and therefore have about 300 pounds of surplus honey. This honey was made before July. Stocks that cast off swarms have invariably not made any surplus honey.

A gentleman in the south part of this county has fifty stocks of black bees, and up to this date (August 10th) has only two finished boxes of surplus honey, A lady in Reading, Vermont, told me that her husband took up two swarms the old way, with brimstone, and only got three pounds of honey from the two. Unless we have an unusual amount of fall pasturage, probably more than one-half of the young swarms, and many of the old stocks, will starve before next spring. Italians, both old and new stocks, are now generally well supplied with stores for winter.

I close by wishing success to the Editor and readers of the American Bee Journal.

Geo. H. D. Ruggless.

Hartland, Vt., Aug. 10, 1869.

[For the American Bee Journal.]

A Card.

Quinby and some others are so very sensitive on bee-matters, that I have concluded not to publish my little work on straight combs and dividing bees. They might possibly learn something, and that would be too bad. Nearly all the money that was sent for the book has been returned to the senders. Should anyone not receive his money prior to October 1st, please notify me by letter.

M. M. Baldridge.

St. Charles, Ills., Aug. 19, 1869.

[For the American Bee Journal.]

A Challenge,

To all those originating or using hives of any description, and especially those who have claimed that there could be no further improvement in hives; and also those who state that bees will store as much in one hive as in another: Likewise, to all old fogies who think a lifetime in the old beaten track only qualifies one for success, and shut their eyes to all improvements, and cannot see through their cobwebs that the world is moving away from them:

I herewith challenge all manufacturers, inventors, and users of hives of any kind or description, to put up a sum of money, from twenty-five to fifty dollars, as a premium to be awarded to the one presenting the most claims for meritorious points in the construction of their hives, based upon those well-known principles in their economy, and practical in their successful management. Those points to be decided by a committee of experienced and unprejudiced bee-keepers; and in the event of an unsatisfactory decision, to be left for final decision to the Editor of the American Bee Journal. The following to be the main points of superiority:

First. Best hive for *safely* securing the most and best surplus honey.

Second. Best hive for fitting surplus honey for shipment and for exhibition, and in the most desirable shape for the wholesale and retail trades respectively, and for ready and remunerative sale.

Third. Best hive for out-door wintering.

Fourth. Best hive for spring breeding.

Fifth. Best hive for stimulating bees to work, and affording accessible room to work.

Sixth. Best hive, in its adaptation to large or small swarms.

Seventh. Best hive, in the control of ventilation and annual heat.

Eighth. Best hive for wintering small swarms.

Ninth. Best hive for raising surplus queens.

Tenth. Best hive and arrangements for securing desired impregnation of queens.

Eleventh. Best hive to equalize stocks, breed, and swarm artificially.

Twelfth. Best hive for riddance of drone comb.

Thirteenth. Best hive for ease and convenience of handling frames.

Fourteenth. Best hive for the cheapest and best method of securing straight combs in frames.

Fifteenth. Best hive for merits of simplicity, beauty, cheapness of construction, and for general use.

George P. Kellogg.

Waukegan, Ills.

If a colony does not destroy its drones at the time when they are killed in other hives, it is a suspicious indication which demands immediate investigation, to ascertain the presence of the queen.

THE AMERICAN BEE JOURNAL.

WASHINGTON, SEPTEMBER, 1869.

☞Want of room for long articles constrained us to divide several communications received from correspondents last month—reserving a portion for our next issue.

Though we give four pages extra this month, several articles intended for this number, have to be held over until next month.

The **Long Economic Hive** described by the Rev. Mr. Truesdell in a former number of the **Bee Journal**, and again referred to by him in the present, seems to be substantially a more convenient form of the Dzierzon twin hive—that is, a hive that may be used, at pleasure, for the multiplication of stock and the storage of honey; or, with due alternation, as a nucleus hive for rearing queens, or supplying queen cells continuously.

We have received from Mr. H. M. Thomas, of Brooklin, Canada, the sample of alsike clover grown by him, and referred to in an article on a preceding page. The stalks are six feet seven inches long, with numerous and well developed heads or blossoms.

Hay made of this clover is readily eaten by cattle, and bees find abundant and long continued pasturage on the blossoms. The plant is a native of Sweden, and is probably best adapted to a northern climate, though it has been successfully cultivated in some parts of Virginia. It is not a *hybrid*, as English agricultural and botanical writers are in the habit of miscalling it.

We have deposited the sample sent to us in the Agricultural Department at Washington, trusting that we may some day receive, from some of our United States' farmers, samples of home-grown alsike, at least equal to this from Canada.

☞If two nucleus hives or weak colonies have been standing adjoining one another, there is no difficulty in uniting them. In the evening prior to the intended operation, remove the older, less fertile, or least valuable of the queens, and feed each colony liberally with sugar syrup or diluted honey, scented with peppermint or grated nutmeg. Next morning transfer from each nucleus to a larger hive all the combs containing honey, eggs, and brood, with the adhering bees—placing the combs with eggs and larvæ or sealed brood side by side. When all have been transferred, replace the honey-board and cap, and set the hive on the stand, midway between the places previously occupied by the nuclei. Puff in a little smoke if any disposition to be quarrelsome is manifested. On the third day, if the bees are quiet and seem reconciled, the queen may be released from confinement.

If the nuclei or colonies intended to be united have been standing some distance apart, unite them as above described, close the entrance of the new hive with a piece of wire gauze to confine the bees, and place it in a cellar or cool dark chamber until the evening of the following day. Bring it out a little while before dusk, set it where it is intended to remain permanently, and allow the bees to fly. After dark, when they have become settled, close them in again and return them to the cellar, until next evening. Then bring them out and allow them to fly. Most of the older bees will by this time have noted their new location and adhere to it. The younger wlli remain of course.

☞It is now thought by some of the most observant scientific apiarians in Germany, that fertile workers occur only in hives containing bees that were still in the larvæ state while queen raising was in progress in the colony. It is not supposed that all workers bred in such conditions become capable of laying eggs; but that all that do become so qualified, must have been reared in such circumstances.

☞A second swarm issuing from a hive in which *teeting* or *piping* has been heard on only one evening previous, will usually be very discontented and restless for a time after being hived, and may possibly decamp, though it have only one queen. But if teeting was heard on three or four evenings, before the swarm issues, it usually settles down quietly, and speedily despatches any supernumerary queens it may contain. By lapse of time the first emerged young queen has become familarized to and been accepted by the bees, which then adhere to her very unanimously, and reject all others.

Ontario Bee-keepers' Convention. Canada.

A Bee-keepers' Convention will be held at the city of London, Ontario, (Canada), at the time of the Provincial Fair, on Tuesday, Wednesday, and Thursday evenings, September 21st, 22d, and 23d.

It is expected that there will be a large attendance of the bee-keepers of Ontario and Quebec, and of those interested in bee-culture.

A warm invitation is extended to the bee-keepers of the United States, to meet in Convention with us.

J. H. Thomas,
Apiarian.

Brooklin, Ontario, July 30, 1869-

Michigan Bee-keepers' Convention.

The Michigan Bee-keepers' Association will hold its Annual Convention at *Jackson*, during the State Fair, September 21-24. Its sessions will be held at the Board of Trade Hall, at such times as will not prevent attendance at the Fair. Discussions of the various matters of interest to bee-keepers will be held, and the experience of the past season exemplified. Premiums of various grades will be offered, for the best samples of honey. It is hoped that the bee-keepers will attend, and make this session one of interest and instruction.

A. J. Cook,
Sec'y Michigan Bee-keepers' Associa'n.

North-Western Bee-keepers' Association.

The third annual meeting of the North-Western Bee-keepers' Association will be held at Decatur, Illinois, at the time of the State Fair.

The officers for the ensuing year will be chosen on the third day of the fair, which will be the first session. This will be *on the 29th day of September*, some time in the afternoon. Printed notices, giving the place and hour of meeting, will be posted about the grounds on the second day of the Fair.

We earnestly desire our bee-keeping friends in the six North-Western States represented by this Association, to be present particularly early at the annual meeting. There will be three or four sessions during the Fair, to be held in some suitable room on the Fair Grounds, or in the city of Decatur, on which occasion practical questions in bee-culture will be candidly and thoroughly discussed.

We also desire the present members of this Association, and those desirous of visiting it, to bring their choice samples of honey for exhibition. The Secretary will be on the ground on the second day of the Fair, to assist in taking charge of and arranging the honey for exhibition. Suitable prizes for the finest display of honey, will be awarded by the Association.

Those wishing to join the Association will please write to the Secretary, giving their address in full.

The President, at Marengo, Iowa, or the Secretary, at St. Charles, Illinois, will supply any further information that may be desired.

The press everywhere, friendly to the objects of the Society, is respectfully requested to publish the above notice.

C. V. Gardner,
President.

M. M. Baldridge,
Secretary.

Correspondence of the Bee Journal.

Gonzales, Texas, July 6.—We are making large quantities of honey this summer; the best season we have had for many years.—L. M.

Byron, Mich., July 20.—Success to the Bee Journal. I would not be without any one number for what it costs for one year, as I am uneasy for weeks before I get it. I like the suggestion on page 17 of the July number, and send you my photograph. If the idea takes well, as I think it should, I will get that of my apiary taken, and send it to you.—O. E. W.

Winchester, Va., July 27.—You will find enclosed two dollars, for which continue to send me the Bee Journal. I have fifty stands of bees, all in Langstroth hives. We had a fine h season up to the 15th of July. Since that time the bees have made very little. I cannot along without the Bee Journal.—B. F. M.

Rootstown, O., July 29.—Can two swarms of bees standing a few rods apart, with others between them, be successfully united, without removing them to a distant apiary?—S. H.

Snickersville, Va., Aug. 4.—An acquaintance of mine had a hive of bees swarm; and on the eighth day thereafter the swarm threw out a swarm. I transferred them this spring. They had filled their hive with comb and made a winter supply of honey; the combs straight, and they evidently had but one queen then. Query, did they have two queens? Or, if not, did they have a sealed queen when the last swarm came out?—M. M. M.

Meredeth, Pa., Aug. 5.—This has been the wettest season, up to this date, that I ever knew. My first swarm of Italians came off ten days in advance of the natives.—M. W.

West Troy, N. Y., Aug. 4.—The "bee-men" are having a very glorious time in this section. Along the river black bees have hardly swarmed at all. One man in Albany had only two swarms out of thirty stocks in good condition in the spring. Another, near here, did not have a swarm from his twelve stocks, which were in prime condition in the spring. A little back from the river, however, they swarmed considerably, but have made only little honey yet; and if the buck-wheat should prove as honeyless as the white clover and other flowers have, I think most of the new swarms must perish, unless assisted.

The Italian bees have done somewhat better. Five miles back from the river, they commenced swarming about the middle of May, though mine did not commence till in June. I think if I had not disturbed some of my strongest stocks, to get bees for raising early queens, two or three of them would have swarmed in May. In one case, when forcing out a swarm to sell to a gentleman, about the 10th of May, I found queen cells ready to seal. About one-half of mine, as near as I can judge, have swarmed; say, eighty out of one hundred and fifty stocks. But those that I sold to go back into the country, so far as I have heard from them, have all swarmed, and most of them two or three times.

I fear buckwheat is going to be "of the same piece" as the other flowers. A gentleman who has about fifty stocks of bees, has just told me that, on examining a buckwheat field in full blossom, about a week ago, he could not find a single bee on it.—W. M. S.

Batavia, Ill., Aug. 9.—Bees swarmed here till August 1. Most of them swarmed three or four times. It rained most of the time until July 20th. and they did not store much honey up to that time. The prospect is now that the old and the young colonies will all fill up. It is a good season. That great humbug bee disease has disappeared entirely here; a plenty of honey has put a stop to it. Black bees have done as well as the Italians have. I see no difference.—S. W.

Virden, Ill., Aug. 11,—We have had a good season for bees, and they are still at work building comb, and putting out brood,—which is uncommon for the month of August in this locality, where white clover is the principal dependence. I anticipate a good fall for honey. A second swarm which came out of an old box here, June 15, swarmed on the 7th of August, after filling twelve frames with honey. I took out part of their full frames, filled up with empty ones, and let them go back; and they are now building part drone comb.

One swarm which had all worker comb in early spring, raised one frame two-thirds full of drones, and afterwards workers in the same comb. They had a good queen, and no appearance of fertile workers.—J. L. P.

Antrim, Mich., Aug. 12.—I have four colonies of bees in box hives, two of which swarmed three times each. They issued from June 17th, to July 10th. The season was wet and cold, till within two weeks it has been warm and fine. Bees are not doing very well on the buckwheat. —C. W. S.

Oskaloosa, Iowa, Aug. 12.—I have one hundred and fifty colonies of bees. Owing to the wet weather we lost our best honey season—the Linn-blossoms. I have twenty acres of buckwheat now in bloom, and the bees are enjoying it much. Still, I fear we shall not get much surplus honey.—S. J.

Canfield, Ohio, Aug. 13.—This has been a poor honey season here. My bees swarmed more than usual, though most of the black bees around here that were left on their summer stands without protection, last winter, did not swarm. I have taken out the honey with the machine, from most of the surplus boxes, as they were not capped.

I think it is time we had an English name for the honey-emptying machine. We might as well call a churn a butter-making machine. The French name—*mellextracteur*—is too long. We want a short appropriate name. Could not some one of our bee-men appoint a committee to select one? In honor of the celebrated Huber, I would suggest his name, and call it a Huber.—J. W.

☞The name of Huber would scarcely be appropriate, as such an instrument was probably never dreamed of in the philosophy of that celebrated apiarian. Why not name it after its inventor or originator? Call it a Hruschka—pronouncing the word "Rooshka"!

Lucknow, Canada, Aug. 14.—Bees in this neighborhood have done poorly this summer, owing to continual wet weather I believe my Italians had come to the conclusion, before the change, to take it wet or dry; as I have seen them on a piece of alsike clover by wholesale, before it had quit raining. Since the weather changed they have done well.

My opinion is, the three best paying things a beekeeper can lay out his money in, are—the American Bee Journal, Italian bees, and alsike clover. But I cannot get some of my young beekeeping neighbors to believe it—though they'll come to their milk by and by.—J. J.

Lancaster, Canada, Aug. 11.—I read the Bee Journal with very great interest. It is just such as the country requires. In this place white clover grows without any cultivation, and is so abundantly produced during the whole summer season that each farmer might, if he knew the nature and value of the little bee, soon accumulate an independent fortune. Your Journal is evidently doing a good work, where it goes; and, with its aid, anyone may keep bees with profit and interest.

I see on your side of the line bee-culture is far in advance of us. But we are beginning to make progress. The Italian bee is now being better known; the old box hive is now disappearing; and men begin to think that bee-keeping is not altogether an unprofitable business. If we had five or six thousand copies of the Bee Journal circulated among us every month, we would then be on a fair way of advance. Wishing your valuable Journal all success, I remain yours, &c.—J. A.

East Rockport. O., Aug. 20.—The present season has been distinguished for the great number and size of swarms sent off in my apiary. Four came out in the last week in May, and four appeared after the 4th of July. Their prolificness I impute in a great measure, to a free supply of rye-flour, which was fed to them in March and April, before pollen was furnished by flowers.

More than one hundred pounds were taken up by my own, my neighbors,' and the woods-bees. Before the vernal flours appeared, it was seized upon with the greatest avidity, but subsequent to that occurrence it was at once discarded.

In my opinion, attention to this flour-feeding at the proper time, is one of the essentials of success in bee-culture, at least in the vicinity of this lake. In earlier, warmer, and less chilled climates, it may be of less importance.—J. P. K.

[From the "Prairie Farmer."]

A Honey Machine.

The Messrs. Marvin, of St. Charles, have one of the most extensive and best managed apiaries in the West, if not in the whole country. They have over three hundred hives in their apiary, over half of which are the increase of this season. They expect to market two and a half tons of honey, if the flowers continue as plentiful as they now promise to do.

This season they have introduced a novel feature into their apiary in the form of a centrifugal machine for removing the honey from the comb. The idea of this method of clearing the cells of their honey, was proposed in Germany, some years since, though little has been done to utilize the principle till the present season.

The machine which we saw in operation here, was constructed by Mr. Baldridge, and answers an excellent purpose where many swarms of bees are kept. It is a plain box of wood firmly secured together, and is mounted on legs. Within it is a frame having board sides and bottom, and the ends are made of strong wire cloth. This frame is made to revolve at any desired velocity by means of a crank and multiplying cogwheels which are placed above the machine. The combs of a movable hive are placed against these wire cloths, the caps being opened by a sharp knife, the frame turned and the honey striking against the end of the outer box runs to the bottom where it is drawn off and put in jars for the market. After the honey has been removed from one side of the combs, they are reversed and the same operation repeated. A minute's time is all that is required to remove the honey from one set of combs.

We witnessed the experiment of removing honey from the combs, a part of the cells of which were filled with larvæ, from three to six days old. More care is required to remove the honey from these combs than from those that are all filled with honey, yet at least eighty per cent of it may be removed without disturbing the larvæ in the least

The great advantage of the use of these machines is, that the same combs may be used over and over again the same season, and thus, except the time needed to repair them, the bees may gather and store honey continuously. The Messrs. Marvin estimate that the increase of honey by the use of this invention, will be nearly one-half. Should these machines meet with the favor of bee keepers, which we think they may, and be generally introduced, we may look for cheaper honey; but it is plain that we must find a substitute for beeswax, or purchase it only at a greatly increased price.

[For the American Bee Journal.]

A Voice from West Virginia.

The past season, up to August 1st, was excellent for the "busy bees." They made a good start on the fruit blossoms, and then when the tulip tree expanded its thousands of honey-producing pods, they had a glorious feast day after day, from early dawn to late at night, that continued for about a month, with but little interruption owing to the state of the weather. Then came in bloom the linden tree, which gave them rich stores.

Notwithstanding the favorable season, bees in the old fashioned gums did but little better in the way of swarming. Nearly all mine are in Langstroth hives, at their different locations, some eight miles distant from each other. I more than doubled the number of my colonies, and have "*piles*" of honey, which makes my "old fogy" bee neighbors begin to conclude that "scientific" bee-men and patent hives are not such a "nuisance" as they once, and not long since, thought.

We have some "wise men" here in *beeology*, some who still contend that the queen is a *king*; that the drones are the ones that lay all the eggs; and that when a colony become queenless (that is, without a *king*), *if a large wasp be caught and tied in the top of the hive, they will go to work and do as well as ever!* Also, that the moth worm comes in the honey comb without any egg having been laid there, or anywhere else near it; and many other such notions.

The Italian bee, after several unsuccessful attempts, has been introduced into this "dark" corner by the writer, and caused many an old citizen to shake his head and say "humbug." But they are "working out their own salvation," and gaining a worthy name. Their superiority over the natives, this season, with me, has been more than two to one; and yet I have not a fair show for them, as I have only one old queen to breed from. But she is a prize to me. It is astonishing the quantity of brood comb she has filled with eggs. I gave her every advantage to do all she was able. She has a beautiful color, and her progeny, workers and drones, are as well marked as any I ever saw in the West.

The queens I have raised from her are, in color, if possible more beautiful than herself.—So much for getting queens from a reliable source and from one that knows what she is doing and has special care *how* she does it so as to please. I got my queen from Mrs. E. S. Tupper, Brighton, Iowa, and hope to get more from her soon.

More anon, relative to wintering bees in the Langstroth hive—having been very successful in that thing

J. S. FLORY.

FAYETTEVILLE, WEST. VA.

As the life of the drones is usually cut short by violence, it is difficult to ascertain its precise limit. It has been estimated not to exceed four months.

[For the American Bee Journal.]

What We Lack!

MR. EDITOR:—This vicinity is, upon the whole, a very good honey-producing locality. That is, we are favored with a good portion of the principal honey-producing plants, in abundance.

Our bees do very little, except to get their own living, in the spring, until the white clover makes its appearance, which is generally the first week in June. During the reign of the clover, they generally fill their hives nearly full, and do up their swarming.

Before the clover is gone, the basswood comes in bloom, and lasts until about the middle of July. About this time we *usually* have a drouth. The basswoods pass out of bloom; the clover, being mostly on high pasture land, dries up; and from this time until the blossoming of buckwheat (which is about the middle of August), the bees remain idle; but consume most of the clover and basswood honey which they have on hand.

When the honey fails, the queens stop breeding; the combs become nearly empty; and the bees rapidly decrease in number.

When the buckwheat crop does come in, it comes all at once, and is of a comparatively short duration. But there is now such abundance of honey that the empty combs are rapidly refilled—often *brood combs and all.*

Of course this is not always the case. It was so this year; it was so last; but a season giving a yield of honey between the middle of July and the middle of August, is the exception, and not the rule.

Now, is there not something which we can *sow*, to keep up the supply at this period? If not, we must resort to feeding. The alsike clover is probably gone before this time. How is it with borage, or with the melilot clover? Will some one who has raised them, and who has not an axe to grind, please tell us and oblige

J. F. TILLINGHAST.

FACTORYVILLE, PA., Aug. 25, 1869.

[For the American Bee Journal.]

To Clean and Preserve Combs.

I have received numerous letters from different parts of the country, all about the same purport, and making similar inquiries, thus—"Several of my swarms of bees have starved to death already. What shall I do with the combs? and now shall I get the dead bees out, where they are in the cells, without destroying the combs," &c., &c. I reply—keep your combs in a dry room; and by all means preserve them, for I consider combs already built, in quantity sufficient to fill a hive, almost if not quite equivalent to a swarm of bees. All drone or store comb can be inserted in honey boxes. After the dead bees are dry, either put a swarm into the hive containing the combs, or insert a frame at a time into a strong stock hive, and the bees will clean out the dead ones and not injure the comb. If kept in a damp place it will mould with the dead bees in. In summer it must be kept from the moths. If moth eggs are already in, keep the comb in a very warm room until they hatch, then set it out of doors and let them freeze. That is, in the winter—summer would not be a good time to *freeze* them. Mr. Quinby, in his Bee-keepers' book, explains how to get them out of comb in summer, by fumigating with sulphur.

I still think that bees could have been managed so as to have stored honey enough to winter on; and the last summer's operations have not weakened my faith. A swarm of bees, if kept in the right condition, will store sufficient to winter on in six or eight days of honey weather. I have swarms that gathered enough from sumac in six days, to winter two swarms. Still I have neighbors whose bees starved in December.

ELISHA GALLUP.

OSAGE, IOWA.

[From the Country Gentleman.]

Courageous Handling of Bees under Difficulty.

MESSRS. TUCKER & SON:—The cases reported in a late number of the "*Country Gentleman*, of bees lighting on persons when swarming, call to mind an occurrence in which I had a prominent part. About ten years ago one of my townsmen bought a swarm of bees in an old-fashioned box hive, containing about one-half bushel of bees, which he desired me to transfer into two hives of L. L. Langstroth's patent. The bees were drummed out into a box, the combs transferred to the two hives, and the bees divided. While hiving the first half, the other half arose and lit on the back of my neck, hat, and collar. There was no one who dared come near me, and you may imagine I had to carry a steady head. I finished hiving the first half, and took off my hat and shook off the bees at the entrance of the second hive—then my coat; carefully brushing the bees from my neck, and hived and put both swarms on their stands, and only received one sting in the little finger, and then the bee got squeezed between the fingers. I had neither bee-hat nor gloves on.

The transaction was witnessed by the owner, with some friends invited to see the operation, from the windows of the house. He said it was the greatest feat he ever saw performed.

JOEL CURTIS.

NEW BRITAIN, CONN., June 26, 1869.

Every colony which has a new queen, should be watched, in order that the apiarian may be seasonably apprised of her loss.

How doth the little busy bee, improve each *shining* hour.

[For the American Bee Journal.

The Honey Season, &c.

The season in this part of New England has been the most unfavorable for honey since 1863. The spring, up to the first of June, I think was better than the two previous ones. At this time the hives were well filled with bees and brood; swarms commenced issuing, and swarmed too much generally. Many colonies swarmed as many as three or four times each; and some of the virgin stocks swarmed also.

June, up to the last week, was very favorable for honey. The red raspberry blossomed profusely, and the weather was such that the bees obtained honey very fast, and the early swarms filled their hives with comb, while the queens worked as assiduously, filling their combs with eggs. Consequently there was not much honey stored. Since the first of July bees have done nothing—hardly gathering enough for their daily consumption.

White clover has been abundant, and basswood blossomed well generally. But we have had a severe drought; the atmosphere has been dry, and the nights cool. This has checked the flow or the secretion of honey in the flowers. And here I would say that I believe unless the atmosphere is right, bees will secure but little honey, although there may be many honey-producing blossoms at hand. I have known some seasons when bees did not work on buckwheat, which I believe was in consequence of the atmosphere being too dry.

To-day (August 16th) I have examined some of my stocks. In the old ones, I found a good supply of honey; but the young swarms that have filled their hives with comb are very different. Many of them have probably not over one-half enough for wintering purposes. There is little uncapped honey to be seen; and the common bees are uncapping that which was sealed. Unless there is a good supply of full forage, or feeding is resorted to, I fear many colonies will "come up missing" before next spring.

I see by the correspondence in the last BEE JOURNAL, that in many parts of the country bees are swarming too much, and storing but little surplus honey. I learned from Mr. Langstroth, several weeks ago, that his bees were storing remarkably well—obtaining large quantities of honey. Last season, I think, bees in many parts of the West, did but little.

BEE-KEEPERS' CONVENTIONS.

As I read the doings of the Conventions in the different parts of the country, the thought occurred to me—Why cannot New England have something of the kind? What say you, brother bee-keepers of New England?

C. B. BIGLOW.

PERKINSVILLE, VT.

The Orientals call the honey-bee, "*Deborah*: She that speaketh."

[For the American Bee Journal.]

That Paper Hive.

The paper hive and its inventor, as set forth by Mr. Fairbanks, in the August number of th BEE JOURNAL, shows the doctor's new theory in rather unfavorable light, or does not sho him up at all. I dare say the doctor might ha played sharp on some of the Gentiles, had felt so disposed. But the true believer is com manded to watch, and this is quite essential i this age. Facts are what we want.

We carefully weighed three hives on the fir of December, 1868—one paper, and two woo hives; placed one wood hive in the cellar; an the other, with the paper hive, was left out doors. We weighed them again on the first April, and the result was that the hive in th cellar had lost ten pounds; the wood hive out doors (which was double-wall) sixteen pounds while the paper hive, in a more exposed situation, had lost but nine pounds. The bees and combs in the latter were perfectly dry and healthy, while those in the wood hive were f from it.

The paper quilt described in the August number of the JOURNAL, we hope Mr. Fairbanks as well as others, will test the coming winter It will not kill the bees, but, on the other hand protect them from both damp and cold.

We do not approve of the doctor's form hive, or style of top bar, as we think we h a better form and style; but paper in som form, we cannot dispense with.

About the use of movable top bars, inst frames, we have only to read the JOURNAL learn that some of the most eminent Germ apiarians prefer them to frames.

I hope the doctor's new theory of growth, if not true, will lead to more light we believe the old theory is wanting for dence in all its claims.

Yours, for better success in wintering,

CHAS. HAST

DOWAGIAC, MICH., August 12, 1869.

It may generally be ascertained soon hiving a swarm, whether or not it intends remain. If, on applying the ear to the side the hive, a sound be heard as of gnawing rubbing, the bees are getting ready for building, and will rarely decamp—LAN

The hinder legs of the worker bee nished with a spoon-shaped hollow, or basket, to receive the pollen which she gath from the flowers.

The queen bee usually dies of old age in her fourth year, although she has been known to live much longer.

Notched and ragged wings, instead of hairs and wrinkled faces, are the signs of age in the bee.

AMERICAN BEE JOURNAL.

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AT TWO DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

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Practical Bee-Culture.

TRANSLATED FOR THE AMERICAN BEE JOURNAL, FROM THE GERMAN OF C. J. H. GRAVENHORST.

If a practical and progressive beekeeper, having a well-appointed apiary in common hives, came to me, expressing a desire to try the movable comb system, and asking my advice as to the best mode of proceeding, I should frankly say to him: "It is very laudable on your part to be unwilling longer to lag in the rear, but to aim at improvement and progress. Still, I can only consent to give you counsel and aid on condition that you pledge yourself to follow implicitly the instructions I give you; not deviating in the slightest, either to the right or the left, from the course I prescribe. In return for this, however, I can guarantee that your experiment shall result in success; that is, provided you reside, like myself, in a district of country offering moderately good spring pasturage, and the blessing of heaven be not wholly withheld. But if the district in which you reside does not present such spring pasturage, I must request you not to apply to me for counsel. In such case, there are others who could serve you much better than I. Whether movable comb hives are adapted to such a district, is, in my opinion, a yet unsettled question; and one which other beekeepers will doubtless have occasion to investigate and decide."

Should my worthy bee-friend now inquire how I account for the fact that movable comb hives have thus far found so little favor among ordinary beekeepers, I would simply reply: "If the matter be somewhat more closely examined than it usually is, the chief reason will soon become apparent—that is, if we have an opportunity to scrutinize minutely the experiments with movable comb hives which have been made, in various places, by common beekeepers. In the results of these experiments, precisely, will be found the ground of the prevalent prejudice against the new system. I formerly conceived that the greater cost of movable comb hives was the chief reason why they found so little favor with the mass of our beekeepers. I am still of opinion that this is *one* of the reasons, but by no means the *chief*. Common beekeepers judge in this matter by the results attained. If in these their anticipations are realized, they are quite ready to disregard the enhanced cost or the increased trouble attending the adoption of a new system of practice. But, on the contrary, if they are disappointed in results, they will cleave all the more pertinaciously to their old usages. This is rational, and quite natural. The greater number of the experiments made with movable comb hives, furnished unsatisfactory results; and the disappointed beekeepers attributed this to the new kind of hives employed. That, however, was an erroneous conclusion. The fault lay, in reality, with the beekeepers themselves.

1. They had not studied and of course did not understand the new system, and managed their bees in movable comb hives precisely as they did when they kept them in the old-fashioned straw and box hives. And they did this under the impression that this new kind of hive was of itself to produce the results desired. Was it surprising, then, that the experiments miscarried? The new system is essentially different from the old. It must be studied, that a knowledge of it may be acquired; but for a beekeeper of ordinary good sense and tact, there is nothing mysterious or magical about it; and proficiency in its processes may easily and speedily be attained

2. They generally construct their movable comb hives according to their own whims and notions, deviating from the model hives in various particulars, which they conceive to be improvements; and then attribute their failures, not to their misconstructed imitations and their blundering management, but to the new system and the movable comb hive.

3. They commonly commence experimenting with only a single colony, though an old adage says truly, "One hive is no hive." No fair judgment can be deduced from a single colony in a common hive—much less if it be in one with movable frames in the hands of a begin-

ner. Besides, he who has only one colony, must necessarily forego many of the advantages which the new system possesses and obviously presents.

4. They are not careful to provide, especially for the second year's operations, an adequate supply of empty combs; and thus fail to secure one of the essential conditions of success in reducing the new system to practice.

Now, my friend, if you design to experiment with movable comb hives, and desire me to be your counsellor in the premises, you must promise, *first*, to make yourself well acquainted with the principles of the new system of management; *secondly*, to select and adopt for practical use an approved form of movable comb hive; *thirdly*, to start with *at least* two good colonies—it were better to begin with *four*; and *fourthly*, to provide for the second year a fair supply of good, clean, empty combs. As regards the latter, you will be apt to ask me how and where you are to obtain them, and how you are to preserve them for use when obtained. In reply to this, I would say—adopt the course I pursued, and in due time you will be as well supplied with such combs as I am; and I have constantly on hand a store of them sufficient to enable me, in any year, to give each of my colonies fifteen additional combs. Nor are any of these combs more than three years old, because when they get to be older than that they become friable and I melt them down and sell the wax. My process is as follows: When breaking up colonies in old box or straw hives, I carefully select and preserve every good worker comb or piece of comb, adjusting them all properly in frames. And, secondly, I cause new combs to be built in frames to be ready for use—availing myself for this purpose of the comb-building propensity of the workers. This propensity is peculiarly strong and active in young swarms, and in colonies reduced to the condition of a swarm, by brushing the bees from their combs and transferring them to a hive containing frames furnished with worker comb foundations or guide combs. It is also active in a colony having a young queen just become fertile. In the former case—that of young swarms, or of bees brushed from the combs and transferred—I give guide combs only in so many frames as are suited to the size or strength of the colony. In the other case, I give them at most only three frames with guide combs, and place these each alternately between two full built frames. While doing this I am careful to see that the brooding space in the hive is kept entirely free from drone comb. In hives containing frames more than ten inches long, the prevention of drone comb building is more difficult to be accomplished than in such as have shorter frames, or frames not exceeding that length. Experience has shown that in long frames bees are exceedingly prone to build drone comb. This has led to the adoption of shorter frames, by practical apiarians; and it will be found that among the means of preventing the production of drone comb, the selection of hives not more than ten inches broad, is one of the most efficient. In favorable years, swarms, even when placed in empty hives, will completely fill eight or ten frames with worker comb exclusively; and if that number of frames of such combs has once been obtained, the bees may then be allowed to build drone comb also, if they be so inclined; though these should afterwards be transferred to the supers or the surplus honey boxes. When drone comb is cut out or removed from the brooding apartment, pieces of worker comb should at once be inserted or substituted for it. There is another mode of obtaining a large supply of worker comb for future use, to which I sometimes resort. At the busiest honey season, I brush the bees of a strong colony from their combs into a hive furnished with frames containing guide combs only—thus constraining the bees to build new combs, and using those from which they were brushed to strengthen weak colonies. Of course a beginner cannot employ this method; but if swarms happen to be numerous in the spring, he may hive them all, stimulate them to comb-building, and in the fall unite the bees with other stocks, and preserve the combs they have built for use the next spring. I never had any difficulty in preserving empty combs. I suspend them in my garret, immediately under the ridge of the roof, so placing them that they do not touch each other, and allowing a current of air (which moths dislike) to pass freely among them. Thus placed, neither mice nor moths ever injure them.

Having now stated my stipulations, and also shown that they may easily be complied with, I proceed to explain how you may successfully engage in the new system of bee-culture. As already premised, I would, in the first year, place good strong swarms in four movable comb hives, carefully watching to see that they regularly fill the frames with combs, and that those in the brooding apartment contain worker comb exclusively. In the fall, if in want of empty comb for next season's operations, and you have no other source of supply, I would break up the weaker two of those four colonies, uniting the bees with other stocks, and preserving the combs for future use. Next year, I should devote the two remaining colonies exclusively to honey-gathering, as it would be injudicious to allow them to swarm or to divide them. We can only hope to secure one thing at a time—either honey or swarms; to secure both would require an uncommonly good season and superior management. Accordingly, the storing of honey must now be our chief object—for, remember, we are making an experiment to ascertain whether more can be gained by means of movable comb hives, than by the old kind in common use. The old system has taught us that colonies which, after swarming, are still populous, and are speedily re-supplied with a fertile queen, ever prove to be richest in honey stores, if pasturage be reasonably abundant. And why? 1. Such a colony has no occasion to build comb, or need build very little. 2. For a considerable period it has no brood to nurse, and can therefore store up honey as fast as it is gathered. And, 3, the fertility of the vigorous young queen inspires the bees of the colony with renewed energy. Now that which such a colony accomplishes in the natural course of things and by native impulse, in common hives, we must endeavor to secure in movable comb hives by skilful interference and judicious management. Hence, the primary requisite is that the colony must immediately receive a young and fertile queen ; and with such we can supply it artificially, much more expeditiously than a colony, having sent forth a swarm, obtains one by the natural process. Moreover, we prevent swarming—thus maintaining the populousness of the colony unimpaired, and enabling it to take full advantage of the honey season, in the gathering and accumulation of stores. Thus, though a colony which sent forth a natural swarm and has in due course obtained a young and fertile queen can accomplish much; another, in a movable comb hive, which has, by proper management, been placed and kept in similar conditions, must and will, in an equally favorable locality, unquestionably accomplish more ; because it retains all its working force uninteruptedly, and is more speedily supplied with a young fertile queen This certainly will be the result, with proper management. But to provide a colony with a young queen, it becomes necessary to remove the old one. This we proceed to do, as soon as the population has so increased that the brood extends down almost to the lower margin of the combs, and there is reason to expect plenty of pasturage soon. We must previously, however, have made arrangements to have a supply of nearly mature queen cells ready, on the day prior to the unqueening of our colony. There are various methods of effecting this. One of the simplest is to prepare a nucleus colony for rearing queens, marking the day when the queen cells are sealed, and then removing them at the proper time. From the time of the sealing of the cells to the emerging of the queen, seven days commonly elapse ; but the cells are usually in the proper condition for removal on the fourth day after sealing. On the second or third day after the sealing of the queen cells in the nucleus, I remove the queen from the old colony. In a populous colony it is not always easy to find her. In such case, I proceed thus: I open the hive and lift out a brood comb from near the middle of the brooding space. If the queen is found on that comb, all right; the removal is quickly effected, and there is no further trouble. But we are not always so fortunate in our search, and if the queen is not found on that comb, I lift out the division board from between the brood combs and the store combs, introduce the removed comb there, and insert a frame with empty comb in the place left vacant by the transfer. The queen, in the course of her daily perambulations in the hive, will find this empty comb, and having already felt herself cramped for room to deposit her eggs, at once takes possession ; and she will be the more active in supplying the cells with eggs, as she has an instinctive desire to fill up all vacancies in the brooding space. Hence, on lifting out this comb next day, the queen is almost invariably found on it, or will be found there in the course of an hour or two. But before commencing the unqueening operation, I make some other required preliminary arrangements. I take a nucleus hive adapted to receive four combs and place therein two frames furnished with guide comb, and one frame built one-half or nearly two-thirds full, containing about two pounds of honey in the cells. This leaves room for the insertion of a fourth comb. I place this nucleus hive in some convenient spot near the colony to be unqueened. When I find the queen on the inserted decoy comb, I remove from the hive a comb containing brood nearly mature, place the captured queen on it, and insert it with all its adhering bees in the nucleus hive. I now lift out several other frames from the parent colony, brush off the bees from the combs in front of the nucleus hive, and return the frames to their place in the old hive. The bees brushed off readily enter the nucleus hive, and rejoin their queen. After having thus obtained a sufficient stock of bees, I close the entrance, and carry the nucleus hive to my cellar, where it is left four or five days ; or I send it to some distant place in the evening. On the fifth day I return it to the apiary, giving it a new location, and allowing the bees to fly. Some of the older ones will return to their former quarters, but the greater number will adhere to their old queen and soon begin to work. On the day after the unqueening I again open the parent hive, lift out a comb containing brood, and insert a queen cell in it, without brushing off the bees. A queen cell thus inserted in the middle of the brood space is almost invariably accepted—none have ever been destroyed for me. But still, as we can never feel entirely secure that the bees will not thwart our best devised plans, I lift out the comb again in the evening or next morning, to assure myself that the cell has been properly fastened, or to insert another in case it has been destroyed. I examine it again on the day on which, according to my memorandum, the young queen should emerge, to see whether the cell has been regularly opened, or whether the embryo queen has perished or been destroyed. If the result has been favorable the colony will thus have received a new queen in three or four days, and we may expect to find eggs and larvæ in the cells within two weeks from the day of unqueening ; whereas a colony that sends forth a natural swarm will not again have brood to nurse until after the twenty-eighth day. If the requeened colony were now left undisturbed, after-swarms would almost certainly be produced by it. I therefore open it again on the ninth day after the removal of the queen and destroy all the queen cells I can find. Should a swarm nevertheless issue—that is, should the young queen leave, with a portion of the workers, I simply return them, and find no further trouble. During the period when the unqueened colony has no brood to nurse, and even for some days after the young queen becomes fertile, all the honey gathered by the workers will be stored up ; and, what is of no small importance, it will for the most part be stored and capped in the upper section of the combs in the brooding apartment ; and so long as honey can be obtained abroad, the bees will not resort to this store of sealed honey—their native instinct teaching them to use first the honey stored in the lateral combs. Hence, if, when destroying the queen cells, I find one or two combs nearly filled with capped honey, I do not insert the division board between the brooding apartment and honey space, but place one of these full combs of sealed honey in its stead; and if there be more than one, placing the second next to the first, on the side towards the honey space, and then fill out that space with empty combs—using drone combs in preference for this purpose, if I have any. The queen, when ovipositing, rarely passes beyond combs filled with capped honey, in her search for empty cells; and the workers will use the space beyond for the storage of honey.

Were all the brood contained in the combs now permitted to mature in the hive, the colony would speedily become over-populous, and the multitude of workers interfere with the due storage of honey. Too dense a population may thus be almost as disadvantageous as one that is too sparse. We must therefore be careful at all times to have the hive so stocked with bees that the combs are duly covered, but not so crowded that the masses must cluster below the frames and on the front of the hive. To prevent this latter we must seasonably remove two or three combs with sealed brood derived from the old queen, and replace them by empty worker combs. From the removed combs, I take off the bees in the following manner: I open the parent hive, take away the honey board, and with a hand brush sweep down the bees on the tops of the frames. They will at once re-unite with the colony. The combs thus deprived of bees are then given to the nucleus hive, containing the old queen; and to make room for them I transfer frames from the nucleus to a larger colony. Should I subsequently deem it necessary to do so, I take some additional combs from the parent hive, now containing the young queen, and insert them in a nucleus or artificial swarm. It is wonderful to see how prolific such a young fertile queen will prove to be, when placed in favorable circumstances. She is able to furnish eggs for at least two colonies. But the old queen also, if she has not passed her second or third year, will once more display her productiveness in all its pristine amplitude. He who has a large apiary, and knows how to avail himself of this, can readily multiply his colonies as though by steam—quickly building up nuclei and weak stocks to powerful colonies. Nor need any diminution of honey-gathering and storing be apprehended, while this rapid multiplication of stock is going on. The presence of brood will only incite the workers to increased activity, and honey will soon be seen glistening in the cells, if pasturage is plentiful; and then the honey comb-emptier may come into play, which in poor seasons will not be much used; though even in such seasons a strong colony, managed as it should be, will be able to lay up stores enough for the winter. But in a good season, such a colony and its artificial swarms will be able to produce splendid results; and he who has once seen them achieve these, will have learned properly to appreciate the new system of management, and be ready and anxious to make further progress in the course on which he has entered.

It is of course understood that the foregoing is a mere hasty outline sketch of practical operations. He, for example, who engages in bee-culture with movable comb hives, must, as his first object, endeavor to secure the multiplication of colonies; and he must consequently proceed in many respects differently from what is indicated above as proper for a different purpose. Of this more hereafter.

[From the Bienenzeitung.]

A Companion for Hruschka's Ventilated Hive.

(See AMERICAN BEE JOURNAL, vol. 3, page 26.)

When a second swarm issues from any of my hives late in the season, I usually seek for and remove the queen and let the bees return to the parent stock, to avoid the necessity and trouble of re-uniting them in the fall. I did this with one issued on the 12th of July, 1867. It had hung clustered in the window of my garden house, when I shook it down on a table late in the afternoon, hunted for the queen, removed her, and brushed the bees out at the window. One portion of them returned to the parent hive, but another portion—a cluster about as large as my two fists, re-entered through a small hole in one of the window panes, and settled where it had hung before. I was not aware of this, however, until next morning, when I again brushed them out; but unwilling to be thus summarily expelled, they quickly returned, in angry mood, and clustered as before. I concluded to let them have their own way, under the impression that, after they had gratified their whim, they would withdraw of their own accord. But they did not leave, and to keep them from starving, I supplied them with some small bits of honey in the comb. On the 19th of July I chanced to find an expelled queen, which, being then of no value to me, I introduced to this destitute and exposed swarm, and she was readily accepted. On the 20th, at two o'clock in the afternoon, this diminutive swarm suddenly took French leave, rushing out, and then settling on a lower limb of a tree in my orchard. I succeeded in catching the queen, removed her, and left the bees to their fate. But, behold, in ten minutes after they returned in a body to their old location in the garden-house! On the 21st, I found another expelled queen, which being young and yellow, I. gave to the now queenless colony, where she was kindly received. They now remained contentedly in this exposed location, and began to build combs—passing out and in through the hole in the window. On the 28th, another second swarm issued from one of my stocks, and being secured, was carried in and shaken down on the table at the window in the garden-house, that I might search for its queen. But almost instantly the bees began to ascend the window, in orderly procession, and in fifteen minutes had quietly united with the colony already located there. Next day the bees flew briskly, using the hole in the window as a common passage. On the 14th of August, I found that they had built downward five fine combs, twenty-one inches long and ten inches broad. I now left the door of the garden-house constantly open for their accommodation, and they at once gave the new passage-way the preference—continuing to labor with great assiduity. Judging from appearances that they had not a pound of honey in store in the combs, I gave them, on the 20th and 21st of September, seven pounds of granulated sugar dissolved, which they eagerly and speedily carried up. On the 10th of October, I covered the cluster in the room with three folds of woolen blanket, and protected it on the outside with a stout sack nailed against the window; and thus left it.

On the 17th of January and the 17th of February, when bees from my other hives were flying, none made their appearance from this colony, though they always responded promptly with a buzz, when I tapped on their domicile to ascertain whether they were living. On the 23d of February, they first began to fly, and repeated this with a general "turn out" on the 29th. No dead bees were carried out; and from the 9th of March on, they flew regularly and briskly, showing that the colony was then already populous—being actually the most lively and vigorous colony in the apiary, for where any sweet was to be appropriated they were sure to be first on hand. I now resolved, in the first place, that they should build no drone comb, and with this view, I attached to one side eight worker combs built on bars—thus the entire window, thirty inches long, was filled out. I resolved, in the second place, that the colony should not swarm, if it could be prevented; and to that end I removed the woolen blanketing on the 23d of April, thus leaving them and their location open and exposed, as in the previous summer. Nevertheless, they increased so rapidly in numbers, that, on the 24th of May, all the combs were densely covered, and a large cluster was suspended below, busily building drone combs. I now again left the door of the garden-house constantly open, and they soon passed in that direction in main force. It might now be truly called a colossal colony. But to my great regret, and in spite of all my precautions, a strong swarm left on the 22d of June. I then determined to direct all my efforts to prevent after-swarming. As soon as I heard the first young queen teeting and others responding, I shut the hole in the window and closed the door of the house, preventing all egress. After keeping them in confinement four days, I concluded to let them fly for an hour or two; and at noon, on the 4th of July, I opened the hole and the door; and in eight minutes after swarming began. I closed the hole and door again, darkening the chamber, but nothing could now restrain them. In the darkness they pitched down on the table at the window and rolled so wildly about on it in dense masses that I was glad to set them free once more. Hastily attaching a swarming net to the window, I arrested the swarm as it was making its exit there, and transferred it to a hive. I feared that the parent stock was now so greatly reduced in numbers as to be worthless; yet in October following it again hung there as before, in colossal strength. At the end of October, I once more applied the protecting woolen blankets. In the course of the winter, the bees flew out repeatedly, and to-day (April 20th) they are vigorous and active.

Now, what have I learned from all this?

1. *In wintering bees, it is needless to be so exceedingly careful and anxious*, if they are well supplied with stores, and their hive can shield them from the severity of the weather. Placing them in some wintering repository, is a useless and superfluous labor; and is less conducive to their health and comfort, than when wintered out of doors. For twelve years past, I have wintered my bees alternately in a cool, dark, dry, and quiet cellar, and in the open air. When housed many died, dysentery prevailed among them, and the stocks were weak in the spring. When left in the open air, on the other hand, none of these evils were experienced.

2. *Water dearth is a mere imaginary trouble*, for the colony had overhead no covering on which vapor or moisture could condense. The window recess is only four inches broad, and all the rest was covered with woolen blanketing, which certainly absorbed all moisture. During the last fourteen years I have kept my bees in top-opening hives. In the first four years, I did not close the interstices between the slats forming the honey board, leaving open such of them as the bees themselves had not closed; merely placing thereon a sheet of thick paper and a cushion filled with hay:—and they wintered well. Then the idea occurred to me that it might be better to close all these interstices thoroughly. Adopting the notion, I plastered them shut with clay. But the bees did not winter any better than before. As this plastering in the bee-house was attended with much inconvenience, I omitted it during the last four years on the six colonies wintered there; and these not only passed the winter as well as any of the others, but came out last spring as true colossal colonies. I had merely, as in former years, placed a sheet of thick paper on the honey board, laid an old coffee bag on that, and covered this with a layer of about four inches of hay. *There was no trace of water dearth?* Only be careful that your bees are not restricted to old candied honey for winter food.

3. *Bees will swarm when so disposed*, in spite of all the preventions the bee-keeper may use. Give them as much room as you please, and ventilation to reduce the temperature; yet go they will, if the swarming mania seizes them. This colony had the entire garden-house as room for expansion; and that it is a cool place, I am very certain; still the swarm left. Only by removing combs of maturing brood, and inserting empty combs, can swarming be prevented.

4. *That a colony may be well wintered on seven pounds of granulated sugar.* In the first year my small colony had not one pound of honey in store. I gave it seven pounds of granulated sugar in solution, and it was in a splendid con-

dition in the spring. Granulated sugar is preferable to sugar candy, first, because it is *cheaper;* and, secondly, because it is *more soluble.* On the 1st of October I placed equal quantities of this sugar and of candy, side by side, in a small open box in my cellar. On the 20th, the granulated sugar was completely liquified, whereas the candy then merely showed signs of moistness. A saucer of dissolved granulated sugar, exposed in my sitting room, began to candy only after the lapse of nine weeks.

Moreover, I apportioned fifty pounds of granulated sugar among twelve stocks insufficiently supplied with stores, allotting to each in proportion to its seeming deficiency, and estimating one pound of granulated sugar as equivalent to three pounds of honey; and all these passed the winter in excellent condition.

BOTTNER.

[From the London Gardeners' Chronicle.]

Honey Dew.

I have been interested in a discussion on honey dew, which has lately appeared in your columns. As a beekeeper I have often paid attention to this subject. My opinion is that honey dew may be caused in two ways; but that it is generally caused by aphides. It is extracted from the under sides of the leaves, and expelled from their bodies with considerable force, much of it naturally falling on the upper sides of the leaves. I have felt the shower on my face, when standing under a tree which was affected by honey dew. A flagged pavement in our city has lately been quite dark-colored and clammy from the saccharine shower. But, as the result of my observation, I am convinced that honey dew is also frequently an exudation from the pores of the leaves—a sweating, as it were, of saccharine matter, totally unconnected with the operations of any insects. Some years since, honey dew exuded from the currant trees in my garden, to such an extent that large drops formed on the tips of the leaves. The bushes were almost entirely free from aphides. What few were there, were evidently there as a consequence, and not as a cause. In fact, I doubt if they could have existed on the leaves to any great extent, as the exudation was so profuse that they would have been completely clogged and smothered with it. The weather was intensely hot for several weeks at that time. I have on various occasions since observed the same sort of honey dew on other fruit trees. I have taken some of the dripping leaves to the entrances of my hives; but the bees did not seem to care much about appropriating the luscious fluid. The probability is that bees do not gather so much from honey dew, as is generally imagined; but that while the condition of the juices of plants and the state of the weather are peculiarly favorable to its production, flowers generally secrete honey more plentifully than at other times.

I believe there are really two distinct kinds of honey dew; one nearly always present with us, produced by the busy pumping organs of the aphides; the other a spontaneous exudation from the leaves of the trees. Honey dew, when it prevails to any great extent, is produced by considerable heat and dryness of the atmosphere. Mr. Radcliffe is, however, right in supposing that cold cutting winds, preceding or alternating with hot weather, are favorable to its appearance. The plants become to a certain extent unhealthy, and consequently the leaves are more easily affected by what is, in truth, a disease—whether the honey dew is caused by aphides, or whether it be a natural exudation totally independent of them.

Dr. Bevan, the author of the "Honey Bee," says: "I believe it will be found that *there are at least two kinds of honey dew; the one a secretion from the surface of the leaf*, occasioned by one of the causes first alluded to; *the other a deposition from the body of the aphis.*" The italics are his own.

Erasmus Darwin and other naturalists have regarded honey dew as an exudation or secretion from the surface of those leaves upon which it is found, produced by some atmospheric stroke, which has injured their health. Dr. Evans and others have believed it to be a kind of vegetable perspiration, which the trees emit for their relief in sultry weather. Other writers assert that honey dew is an excrementitious matter voided by the aphides, and that it is never seen unattended by aphides.

From this latter assertion I must, with all deference to the opinion lately expressed by Mr. A. Thompson and others in the *Gardeners' Chronicle*, beg leave to dissent. Dr. Bevan's view on this subject is, I believe, essentially the correct one.

S. BEVAN FOX.

[For the American Bee Journal.]

Queen Raising and Artificial Swarming.

MR. EDITOR:—I have received so many good things in the BEE JOURNAL, that it seems wrong for me to keep silent any longer, and not contribute my "mite."

Improved beekeeping is yet in its infancy in this section, and improvements are being made so rapidly, that it is about all I can do to keep up with the teachings of the JOURNAL, to say nothing of making any faster advancement, or undertaking to *teach* your readers anything. However, I have a few ideas that I wish to lay before you, in order to get the opinions of some of the more learned and experienced apiarians respecting them.

First, then, in regard to *queen rearing.* It seems that every one who is fortunate enough to learn the art to perfection, is smart enough to keep it to himself, and profit all he can by his knowledge. Now I have devoured everything within my reach on this subject, as well as on beekeeping in general. And, after taking all the plans I could get hold of, and *boiling them down*, I have adopted the following, which I propose to put in practice next season. In the meantime, I lay it before your experienced readers, hoping that they, one and all, will give their candid opinion of it through the JOURNAL. I cannot claim much originality, for this plan was picked up, a little here and a little there. Let them correct and revise it all they can; or if necessary reject it altogether, providing they give us a better one.

In the first place, our frames are about fifteen inches by eleven, inside measure; with eight frames to each hive. I now have constructed for one of these hives thirty-two small frames, seven and a half inches by five and a half, inside measure. Four of these are now placed into each of the large frames of one hive, and filled with worker comb, which I transferred from an old box hive this summer.

My only object in having these small frames fitted into the large ones in this manner, is simply to winter bees in them successfully. I propose to take these small frames out of the large ones next spring, and place them in two rows, side by side, having sixteen frames in each row, in a low hive made to receive them in that manner. This is to contain a full swarm of bees, and a prolific queen. I will then make choice of three strong colonies for constructing queen cells. Supposing No. 1 to contain the queen from which I wish to breed, as soon as practicable in the spring, I will remove the queen from No. 2, using her to form an artificial colony. I will then take the queen from No. 1, and put her in No. 2. The bees in No. 1 will now proceed to construct a large number of queen cells. In about one week, I will take the queen from No. 3, using her as I did the one from No. 2. Then take the breeding queen from No. 2, and introduce her into No. 3; whereupon the occupants of No. 2 will also proceed to construct cells, as did No. 1, and from eggs laid by the same queen.

By this time the cells in No. 1 will be ready for removal. I will now have ready some nucleus boxes of a size just sufficient to contain three of the small frames. Take the frames from their hives, together with a sufficient quantity of adhering bees, honey, and sealed brood. In this way the hive containing the small frames is made to furnish bees, brood, and combs for a dozen nuclei, if broken up for that purpose; if not, a small portion may be taken at a time, filling their place with duplicate frames containing worker comb—thus forming a still larger number, but consuming more time. Into each of these nucleus boxes, I will now insert a sealed queen cell, confine the bees in them for a few days, and in due time each nucleus will contain a queen. I am confident that it would be a paying business for every bee-keeper having a considerable number of stocks, to keep on hand at all times a supply of *reserve queens.* For directions for keeping your supernumerary queens, see AMERICAN BEE JOURNAL, September, 1868, page 45.

I have also a plan for keeping reserve queens at a very small expense, and with but little trouble, which I may give you in another article.

It is unnecessary, at the present day, to dwell upon the advantages of *artificial swarming;* but the manner in which it is performed by many, may, I think, yet be improved. I wish therefore to present a few remarks on this subject, as it is of vital importance that every one who attempts to perform this operation should thoroughly understand his business. I have before now followed to the letter methods presented by persons who have their names before the bee-keeping world as learned and reliable men and *women*, and I have been greatly disappointed at times, by making a grand failure of the whole thing! For instance, I was directed, in a very pretty article by Mrs. Tupper (and I have since seen the plan recommended by others) to take, I think, *two* full frames from the hive, place them in an empty hive, fill out with empty frames, and set this on the old stand. This of course is to contain the old queen. Then remove the old hive to a *new stand* in the apiary. I never tried this but *twice*, and will never try it again. It may work satisfactorily for others, but it did not for me. In the first instance, the bees so nearly all left the hive removed, that the moth worms came near spoiling it; and in the second instance, the hive had so few bees left a few days after being removed, that I had to change places with another—a strong stock—in order to equalize them. This is what I should have done at first, when practising this method.

I fully believe in the system of *reserve queens.* I think that any method of artificial swarming which compels them to raise a queen, after being divided, *is all* wrong. Still, if we make swarms *early*, we cannot *always* have a queen on hand. A plan, which I prefer to the above, is to take a stock and divide it equally—that is, to take out one-half of the bees and combs, and put them in another hive. Then put in one or two empty frames and adjust the division board until they need more room. Notice, if convenient, into which hive the queen is put; but if you cannot readily see her, no matter. You can open them the next morning, and quickly ascertain which division she is in, as the queenless one will have commenced building queen cells. Now introduce a fertile queen in the queenless part; set them side by side on the old stand, with not too much room at first, and you are all right. If you have no spare queens at command, give the queenless part about five frames filled with brood and eggs, and adjust the division board to the five frames, giving no empty frames for at least a week. About the time the young queen hatches, exchange some of the frames with those of another hive containing sealed brood—thus keeping up their numbers until the queen commences laying. The adjustable division board I consider a very important part of *any* hive, and a hive without it, is by no means complete. The hive I use I can readily adjust to the capacity of from *one* to *twenty-four* frames, thus adapting it to the size of any swarm.

Two frames of comb, with a good queen and bees enough *to cover them*, makes a *strong swarm*, if placed in a hive with but little spare room; but if placed in a full sized hive, they will do comparatively little. This is the secret of building up artificial swarms.

Now one word, if you please, in regard to patent hives. If I rightly understand it, the principal point covered by patent in the Langstroth hive, is *space*. Take that *space* and exhaust the *air*, and there is *nothing* left. Consequently Mr. Langstroth has either patented *air* or *nothing*. If it is *air*, we must have that, even if we do have to pay fifty cents a hive for it!

But, Mr. Editor, I fear you are getting tired of this, and besides I have exhausted all my *space*, and I do not suppose I can get any more, as Mr. L. *has got it all patented!*

J. F. TILLINGHAST.

FACTORYVILLE, PA., Aug. 20, 1869.

[For the American Bee Journal.]

Superstitions.

In October, 1841, my father died. At that time he had five swarms of bees. At the funeral, I was told that I must certainly inform the bees that their master was dead, or, which would answer the purpose as well, dress each hive with some of the crape worn by the mourners, or the bees would all desert their hives; or, if they did not desert, they certainly would never work any more.

At that time I lived at a mill, three and a half miles from home. Father was at the mill when he received his death wound. I went home with him, and remained with him until his death. He died in three days after receiving his wound by an accident. I tipped up each hive, and the bees were all there, and as I supposed in excellent condition, three days before the funeral. Of course I did not inform the bees or dress the hives in mourning, for I never was superstitious, and paid no further attention to what was said on the subject. However, on the third day after the funeral I was home, and of course went to look at the bees, and every bee was gone—neither a live or a dead one was left! The condition of the hives was this, every comb was filled with sealed honey from top to bottom, scarcely an empty cell being left. Obviously the superstitous ones had the advantage of me then, for at that time I could not account, on rational grounds, for the desertion of the bees. But, since, I have had bees desert at different times, in the fall, and go into other hives. When their hives are completely filled with honey, if the bees do not desert them, they will all perish as soon as the weather gets cold enough.

You need not ask me whether I believe in *luck* or in any superstitions about bees, for I do not. I believe that everything relating to them can be satisfactorily explained, when well understood. One day, this summer, I made a dozen artificial swarms for different individuals. On the third day after making them, the thermometer went up to 110° F. in the shade, and two of the said swarms deserted their hives, one of which belonged to Mr. B. C. Whitacre. The first time I saw him after the occurrence, he said: "Well, Gallup, you need not tell me there is nothing in luck. I tell you it is just my luck!" Now, friend Whitacre, if you had ventilated your hive properly, or shaded it well, or, if you could not have thus kept them cool enough, sprinkled the outside of the hive with cold water, or covered it with wet cloths during such extreme heat, the bees would have staid. Your luck would have been changed simply by knowing how to manage. We have good seasons and bad seasons for honey, and that is all the luck in bee-keeping. Everything else consists in knowing how to do the right thing, and doing it at the right time.

The superstitious folks have all sorts of queer questions to ask, and among them often some as simple and as silly as any you could possibly imagine. Of this kind was the following put to me seriously one day: "Do you believe that a person can keep bees, or have any luck with them, when man and wife quarrel or are at loggerheads all the time?" The same person said: "I should like to keep bees, and have bought swarms at different times, but never had any luck." I advised him, of course, to stop quarreling with his wife, try his luck again, and above all all things subscribe for and carefully read the BEE JOURNAL.

E. GALLUP.

OSAGE, IOWA.

[For the American Bee Journal.]

Wintering Bees in Canada.

There seems to be such a diversity of opinion in regard to wintering bees, that a novice without experience might be at a loss which method to adopt. My opinion is that, for all high latitudes, or in latitudes where the mercury sinks to 20° below zero, and downwards, a special repository, either wholly or partially under ground, is the proper place for them. If those beekeepers who, after repeated failures, are still anxious to know how they can winter their bees successfully, will construct a cellar as described by Mr. J. H. Thomas, in the June number of the BEE JOURNAL, they may, as he says, "put in their bees, lock the door, and go about their business."

Last fall I prepared such a receptacle, only on a smaller scale and without the *cement floor*—the want of which served partially as a basis for the following experience in UPWARD VENTILATION.

My cellar is six and a half feet broad by eighteen and a half feet long, and about seven and a half feet high in the centre; and being on a hill-side, I did not expect to be troubled with water, but to be safe, I dug a drain.

I put my bees in about the first week in November. First, I placed a row of hives on one side of the cellar, sliding the honey boards about one and a half inches forward, and removing the slats which cover the entrances to the honey boxes. The entrances of the hives were also left open. The cellar was ventilated in the roof by a box or tube four inches by six; and near the ground by the drain four inches by four. I shall give additional ventilation this year, and so arranged that I can regulate it at pleasure. At first I was afraid that I had given the movable comb hives too much ventilation; but the result will show that I did right.

I visited them every two weeks. Soon after I put them in, I began to see that my cellar was too damp. Mould began to collect on the walls, dead bees, and damp places on the roof; but I could give them no more ventilation without giving them light also. I examined a few honey boards and found the under sides covered with large drops of water, which I thought at the time indicated a bad condition. After this I felt anxious as to the final result of it all. But the worst had not yet come, for on going to examine them one day about the middle of March, after a thaw, I found a stream of water issuing from the drain, and the bottom of the cellar covered to the depth of one or two inches. Now, I thought, my bees are "gone up" surely. I could not take them out until the 15th of April; and before this they had become quite restless from the high temperature of the cellar. When I took them out, however, instead of finding them a rotten mass in each hive, such as one might expect would be produced by so much heat and moisture, I found only *two* mouldy combs in sixteen movable frame hives; while a few old box hives, to which I could give but little upward ventilation, contained considerable mouldy comb.

All my hives, but one, contained brood in all stages and plenty of bees and honey. Not a hive was lost out of fifty-five, which included some of my neighbors'. My opinion is that they could not have been wintered better, and be in normal condition. Now I believe the whole matter of ventilation is this: If bees are wintered in a damp cellar, give plenty of upward ventilation.

This season has been quite unfavorable for bee-keepers here, who depend on surplus honey for profit. The weather was rainy and cloudy the greater part of the summer; and the bees lost nearly all the clover season. Yet, notwithstanding the bad season, I have increased my stocks from twenty to sixty-one, both by natural and artificial swarming; and I shall have about four hundred pounds of surplus honey. I have practiced three methods of artificial swarming, and shall practice artificial swarming exclusively next year.

I use movable comb hives, thirteen and a half inches by sixteen, inside measurement, and ten inches deep—"the shallow things!" I like them so well that I intend to make one hundred of them for next summer's use.

Don't you think, Mr. Editor, that tight-fitting frames and movable top bars show a retrograde movement? ("Pitch in," but quietly, friends Hastings and Benedict.) What do you think, Elisha? For my part I am sorry to see any person trying to do away with frames.

George Cork.

Bloomfield, Ontario, Canada, September 2, 1869.

Artificial operations of all kinds are most successful when bee-forage is abundant.

[For the American Bee Journal]

From Canada.

Wintering Bees; and a Wintering House.

Mr. Editor:—I have been an attentive reader of your valuable paper for the past three years, and have been much profited by the information received, through its columns, from your many obliging correspondents. I often think what an improvement it would make in the agricultural papers if farmers were a little more communicative and obliging to each other; in short, if they would follow the example of the apiarians, in this respect, their papers would not be so dry and tasteless as they frequently are.

As it is now approaching winter, perhaps there is nothing I could say that would be more interesting than to describe a wintering house that I have in course of erection for my bees. There is nothing more important, after all, than to be able to keep our bees in good condition through the winter; and on this particular point I feel myself weak. I still require information, and I fear there are many others like myself in this respect.

Some advise wintering on their summer stands; some in cellars; and some say bury in the snow, or in the sand, or in a clamp; while others say, build a house above ground expressly for the purpose. All may be right, and doubtless are in their special locality, as the climate varies much in the territory over which the Journal circulates. This may, in some measure, account for the different opinions expressed. I have tried nearly all the plans above enumerated, and have found serious objections to nearly all of them. This winter I propose to winter my bees in a repository above ground, built on purpose. My objection to cellars is, they are frequently too damp, and it is difficult to move the hives down and up; and the bees are liable to be disturbed frequently by persons going down for potatoes, apples, &c. I have tried wintering in a clamp or pit. I find that, in that way, the bees eat less, but the combs come out mouldy, and sometimes worthless. Wintering on the summer stands requires more honey, nearly twice as much, as the bees are roused to activity every fine day; and a great many are lost in the snow, while many others are frozen stiff in the hive during long-continued cold weather. Besides being hazardous, it looks careless, to winter thus.

The house I am building is 12½ feet by 14½; sills raised on posts 8 inches from the ground. The lower joists are 2 by 10 inches, and run lengthwise. The centre ones are 1 inch lower than the sills. A rough floor is laid on the under side, then filled with saw-dust to the top of the joists. I have a double inch floor on the top. The floor is cut in two in the centre and the two parts do not meet by one inch, which opening will answer the double purpose of winter ventilation and as a vent to let water off from snow that I intend to pile in towards spring, (in a small hall, to be left in the centre) in order to lower the temperature when the cold begins to moderate.

The frame is put up with 2 x 10 scantling, weather boarded and battened on the outside, and lined on the inside. The hollow wall all filled up with saw-dust. The joists above are 2 x 8, lined on the under side, and 8 inches of saw-dust laid on top, through which an upward ventilator passes, reaching from the ceiling up through the roof of the house, and having at bottom a regulating valve. I have a small window in one end, with glass, and also blinds on both inside and outside; a double door, one on each side of frame, and in the winter a straw mattress will be placed between the doors.

Now, Mr. Editor, if any of the friends can suggest any improvement on the above plan, I would feel obliged.

I propose, in summer, to use the house for working my honey machine in, or for storing honey, or any other work connected with bees in summer. I have seventy swarms, and one hundred can be stored away in this house, if in Thomas' hive, (and by the way that is the best hive, and is all the go in Canada).

With us, the past season will, I think, prove to be the poorest we have had for some time. It has been just the reverse of last summer—that is, too wet and cold. I fear very little surplus honey will be obtained.

A. C. ATWOOD.

DUNCRIEFF, CANADA, Aug. 20, 1869.

[For the American Bee Journal.]

Size of Hives.

In answer to the inquiry of Mr. C. S. Paine, in the September number of the BEE JOURNAL, I will give my impressions as to the proper size of hives.

Many writers have suggested that the size of the hives should be proportionate to the pasturage of the district in which they are used; small sized hives being best adapted to poor honey countries, and larger hives for sections yielding honey more abundantly.

My opinion differs widely from these ideas; for I think, whatever be the honey-yielding quality of the country, the capacity of the hives should be in relative proportion to the fecundity of the queens.

I have ascertained that, in the height of the brooding season, the normal fecundity of a healthy prolific queen enables her to lay three thousand eggs daily, if she is supplied with empty worker comb. We know, also, that twenty-one or twenty-two days are required for the developement of the worker bee, from the time the egg is hatched until she leaves the cell. If we now multiply 3,000 by 22, we shall have 64,000 as the number of empty cells required for the accommodation of a queen ordinarily prolific.

But there is, besides, some room required in the combs for the provisions—honey and bee-bread; and if we allow 20,000 cells for this purpose, we shall have the area of 84,000 cells as the necessary room inside of the frames in movable comb hives.

Now every square inch contains fifty worker cells; and if we divide 84,000 by 50, we shall have 1,650 square inches, or somewhat more than 11 square feet on the total surface of all the combs in a good-sized hive. That surface is the same as that indicated as the proper size in the works of all good authors on bees—such as Langstroth, Quinby, &c. In order to ascertain whether so much room is necessary, let us compare the product of a hive holding 1,650 square inches, and that of another holding only 1,050; and let us suppose that each of these hives is stocked with 10,000 bees on the 1st of April. What will be the difference in the number of workers after the lapse of one month?

HIVE OF 1,050 SQUARE INCHES.

Population on the 1st of April.......	10,000	bees.
Hatching, 1,700 bees per day, for 30 days..............................	51,000	"
	61,000	"
Deduct, for mortality, one-third.....	20,000	"
Population, on the 1st of May.......	41,000	"

HIVE OF 1,650 SQUARE INCHES.

Population on the 1st of April.......	10,000	bees.
Hatching, 2,500 bees per day, for 30 days..............................	75,000	"
	85,000	"
Deduct, for mortality, one-third....	28,000	"
Population on the 1st of May.......	57,000	"

Let it be noted that we have put the number of eggs in the 1,650 inch hive at only 2,500, instead of 3,000, the product, daily, of a very prolific queens.

But we know that while 10,000 bees gather one pound of honey, 20,000 will gather four pounds, and 30,000 nine pounds; for the increase is to be calculated by the square of the numbers. Now let us see what will be the probable difference between the weight of the honey gathered in one month by the bees of the two hives, supposed one pound is gathered by 10,000 bees in one month.

HIVE OF 1,050 SQUARE INCHES.

The product of the 4 ten thousand bees will be four times four pounds, or 16 pounds.

HIVE OF 1,650 SQUARE INCHES.

The product of the 5 ten thousand and 7,000 bees will be 5 ten 7-10 by 5 pounds, or 32 pounds 49-100.

The probable difference should be 16 pounds 49-100, in favor of the larger hive, the product of which will be double that of the smaller one.

We know to-day, by experience, that the larger the hive the greater the product; but the large hive should be provided with a division board to adapt the space to the strength of the colony.

CH. DADANT.

HAMILTON, ILLS.

The bee moth is the only insect known to feed on wax.

[For the American Bee Journal.]

Queens Mating Twice.

Mr. Editor:—Several correspondents have given instances of queens mating with drones two or three times. Now, I have no doubt but that queens do mate with drones more than once; In fact, I know that they do. But that they are fertilized, or partially fertilized, more than once, I do not believe. In the first place, it must be admitted to be contrary to nature. I have had several queens go out and mate with drones twice; but they were not fertilized the first time. Had they been, they would not have left the hive the second time for that purpose.

I have made queen rearing my *only* business during the hot weather, for several years, and have reared hundreds of them (about six hundred this season); and I am satisfied that not over one queen in one hundred ever mates with a drone more than once. And I am as well satisfied, also, that they are fertilized but once.

I usually examine my hives that have young queens on the fifth day, to see whether they have been fertilized; and I do this soon after they have been out. If they have been fertilized, the proof of it will be seen adhering to the queen for hours after; and in one case I had to kill a queen after she had retained it over a week. When the queen has met the drone and is fertilized, the bees cannot remove it, as they did in Mr. Hill's case; but where they meet the drone and are not fertilized, the bees seem to know it, and will pull it away. If then the next day is pleasant, such queen will go out again, and will almost certainly be fertilized.

H. Alley.

Wenham, Mass.

[For the American Bee Journal.]

Queens Mating Twice.

Mr. Editor:—I am aware that the above subject has been somewhat ventilated in the columns of the "Journal," but as yet it is far from being exhausted, and I once more indite a few lines in defense of the side of this *important* topic which I have heretofore taken. And let me say here that, whenever I have used, or may use, the word *mate*, I use it *only* in the sense of copulation resulting in impregnation.

There are parties who take the affirmative of this question, who would have us believe that the spermatheca of the queen, like the inexhaustible bottle of the conjurer, is full of partitions, well defined and separate, each containing the seminal fluid of one of the different drones cohabited with, so that by her own will she can at pleasure fertilize the eggs laid, with the semen of one or any of these drones—thus producing either *pure* Italians or pure *blacks*, as the case may be.

This *theory* is certainly new, and is so far contrary to the recognized laws of reproduction, that I must, in the absence of facts, be considered on the doubting side; and I would say to Mr. Davis that I do not see what *facts* he can bring to prove his position, if he relies wholly on the queen mentioned on page 140, volume 4; for he himself says she only mated with black drones, consequently *her* progeny in no case could have been pure Italians, even if his proposition is true.

I will state a few facts. First, so far as I can learn, there never has been an instance where a *fertile* queen has left the hive on an amatory excursion. Second, *Italian queens* mated with *black drones* produce all the phenomena claimed by the affirmative. Third, there is not a case to be shown where a queen raised from an Italian queen mated with a black drone, showed in her progeny any evidence that she was pure. Fourth, the laws of reproduction are invariable, and crossing of broods must either improve or deteriorate, as half breeds can never again be made pure; return to the original stock again after once crossing, and though you breed "to all eternity," there will be a dash of impure blood remaining. This law as much applies to the worker progeny of the Apis, as to any other form of creation. Consequently it would be impossible for an Italian queen, mated with a black drone, to produce any *worker* progeny which was anything but hybrid; no matter whether such progeny has three bands or not. It is not by the bands of any one bee that we decide the purity of the mother; but the whole progeny is examined, and if a single bee native to the hive is found wanting a band, the evidence is certain that the mother is impure.

This subject is one to which I have given considerable time and study; and deeming it of the utmost importance in bee-culture, I have taken strong ground, and while I do not court criticism, I still expect it, and trust I shall bear it patiently, hoping that good will result from it. In the present state of apicultural science, it will be very easy to *prove* conclusively many of the points of theory which have been advanced on this question; and we all know that unproved and non-practical theories have been the bane of bee-keeping in ages past. Let us (the readers of the Bee Journal) see to it that we are not misled by such in future.

If the doctrine above mentioned is true, it will be impossible to introduce and keep pure the Italian stock in this country, or in any other, where the black bee exists; for years must elapse, even under the most favorable circumstances, before all the drones within a radius of three miles of every apiary can be killed. And though you use the "Köhler" or any other system, it is all "knocked in the head" by some mistress queen, who sees fit to leave the hive at any unexpected moment; and the result soon shows itself.

Hoping this subject may be thoroughly canvassed, in good temper, and completely exhausted by abler heads than mine, I am,

Yours truly,

J. E. Pond, Jr.

Foxboro', Mass., Sept., 1869.

Nearly forty pounds of honey will be ordinarily used by a new swarm in filling their hive with combs.

[For the American Bee Journal.]

Alsike Clover in Second Bloom.

Mr. Editor:—Mr. Tillinghast, of Pennsylvania, desires to know what honey-producing plants will best fill the vacancy between mid-July and mid-August.

I have taken some pains, during the last three years, to test mustard, cleome, borage, melilot clover, and several other plants, and would decidedly give the preference to the melilot, if it were of any other use than just as bee-pasturage and to enrich the land.

If a piece of rich land were sown, late in the fall, with an even mixture of cleome and melilot seed, it would furnish excellent pasture for the two following years, far more than filling the vacancy referred to; and then, if plowed under in the third fall, would leave the land very much richer—and if improvement of the land was desired, it might be a very profitable investment to a bee-keeper.

Melilot, in good soil, might yield in the second year, an amazing quantity of sweet flowers. I have it now seven feet high, and covered with flowers from the bottom up. It should be understood that the "*cleome integrifolia*" is an annual, and the "*melilotus leucantha*" a biennial. Hence the propriety of mixing the seed, to get a crop the first year.

But, all things considered, "alsike clover" will be found by far the most profitable, and can be managed to cover the period mentioned by Mr. Tillinghast. If pastured until early in June, or mowed just when it is coming into blossom the first time, it will bloom largely the second time. At least mine has done so this year. I have near my barn a choice piece, a part of which was mown on the 22d of June, and turned up a good swath, with few blossoms; and the remainder was mown on the 30th of June, when in full blossom. The first part began to bloom again in about ten days, and has increased in the number of blossoms until the present time, (September 10th). The later cut was longer coming into second blossom, and did not bloom so fully; yet it is quite nice.

I should remark, however, that this was a wet season with us, and that suits the alsike. This clover should be sown with wheat in the spring, on good ground, about five pounds of clean seed to the acre. Or, if for general farm purposes, I prefer mixing timothy and red clover seed with it. Cattle like it exceedingly.

J. W. Truesdell.

Warwick, P. Q., Canada.

The more I learn, the more clearly I perceive how much more, both in theory and practice, remains to be learned; and that in reality man never gets done learning.—Dzierzon.

Combs having no brood, may be smoked with the fumes of burning sulphur, to kill the eggs or worms of the moth.

[For the American Bee Journal.]

Novice.

Mr. Editor, and all the readers of the Bee Journal:—When we last wrote you (July 5th) we mentioned that we had made twenty-five swarms on our new plan, and as the honey seemed to slack off about the last week in July, as it usually does here, we must confess that we began to think that bees, for 1869, were not quite up to our anticipations, and we were almost inclined to feel a little discouraged. But as we are natually hopeful, we soon began to think that perhaps just this season might be an exception to our previous experience, and that we might have a yield of honey in August, as they do in some other localities; or that something unusual would turn up in our favor; or rather, that *we could turn something up*, as that is the way we usually have to do. Accordingly, we made daily visits to almost every hive, removed all weeds and grass, levelled things up plumb and square, and, in short, made everything as tidy and neat about the hives as we could.

By the way, Mr. Editor, you must allow us to stop long enough to tell you how we have our apiary arranged, We could never bear to see a straight close row of hives, and, as is too often the case, under some rickety old shed. So we commenced making separate stands, as Quinby recommends, viz: a broad square board, with a heavy piece of oak scantling across each end. (Empty pine boxes will often furnish very smooth nice boards for this purpose). And as the bees need shade, we have planted Concord grape vines, eight feet apart, each way, all over our apiary, and with a stand such as first mentioned, set on the north side of each vine, which is trained on a proper trellis, *a la* "Fuller on the Grape." Thus we think we have got something pretty nice. We can walk all around each hive, and when in a hurry can shake bees, queen, and all, on the ground almost anywhere in front of the hives, and they are sure to get in safe, provided the space is kept clean, as it should be; and this we accomplish partly by means of saw-dust, and more by hoeing up the weeds by main strength ourselves *individually*. We cannot *hire* any gardener to work among bee hives—"*No sir, ee.*"

Well, we got everything in the best shape we knew how, and watched as before mentioned for swarms in August; and sure enough, after about ten days rest, the bees began slowly to bring in honey and build combs again; and, in a few days more, some of the heaviest hives were about full. So we took combs out of the middle, and the more we took out, the faster they filled the empty frames. Pretty soon we had our thirty-five hives making a comb per week; and ten frames of honey and brood make a good swarm, lacking only a queen. Then, as the drones were not yet killed off, we started queen cells, which seemed to produce fine, yellow, laying queens in an unusual short time, and with a precision we were quite unaccustomed to. It was but a few days before the swarms made with ten full frames became so filled that they assisted in supplying full frames for other new swarms, and so on. At that rate of progression how do you suppose we should have ended, had we not had another cessation of the honey crop about this date (September 10th)?

We have now forty-eight (48) hives full of bees and honey, and we should like *awfully* building combs, swarms, and queens up to a hundred, as we just begin to get our hand in; and now, especially, as Argo has got fifty-two (52). By the way, how in the world did he manage to do it? We think it looks like a tall operation to make forty-eight stocks from eleven; and so it is, to raise all nice yellow queens, as we have done.

Now for the facts in our case. The black bees have done nothing here, since the middle of July. The superiority of the Italians was never more apparent—as the black bees from our neighbors were continually trying to rob, while the Italians were so busy.

After the white clover had failed, we went to work to find where the honey came from. Part of it, we think, did this time really come from buckwheat; but, in the latter part of the day, they seemed to be working very busily in a certain direction, and the hives had a strong smell of something like humble bees' honey, which we thought *must be* from the red clover. To make a sure thing of it, we started off in the direction they went, to find it. After a long walk we did find some red clover, but not a bee on it. We searched further in that direction, and were forced to go home, finding nothing from which bees were getting honey. But the next day we saw them so busy again, until near dark, bringing both honey and pollen almost as white as snow. Then we resolved that we *would* unravel the mystery; and as we thought it might possibly be something from some forest tree, we went this time into the woods, and there the riddle was solved. A white flowering plant, growing from two to four feet high, we at first found sparingly, and then more and more plentifully, until further off, from one to two miles from the apiary, we found acres of it, and alive with little "yellow pets" as happy as the day is long, "from morn to dewy eve" bringing their heavy loads. As no one here seems to know the name of the plant, we send you a leaf and flowers inclosed in this. Any information as to what it is, would be a favor.*

Will you, Mr. Editor, or any one else, please tell us what you think of the following plan of wintering bees, here, in our open uncertain winters, when there may be summer weather in January, or the mercury below zero in March?

For instance:—take forty hives, with caps and honey boards off, pile them in two rows four feet long and five feet high, with the entrances turned outward, in the middle of the apiary. Put a good roof over all, board up the ends, and have the sides on hinges to open up during mild weather that the bees can fly, and so that they may be shut down in cold weather. So many colonies placed thus together would certainly keep warm even in very cold weather, and during a protracted warm spell the sides could be lifted up, or used as a ready means of ventilation at any time. Would not this secure nearly all the advantages of being in a cellar or a similar place; and at the same time, of wintering in the open air?

We do not like to try the experiment, until we have the opinion of some one who has had more experience than we have. A vehement determination not to lose the forty-eight swarms we have, if we can possibly help it, by wintering in a cellar; nor to have them weakened both in bees and honey, by the inclemency of "all out doors" (with the bars down), is our present "frame of mind."

And, as we lay down our pen, and prepare to go home because it is almost twelve o'clock and Saturday night, we make our best bow before closing the door, and wish all manner of success and happiness to both the Editor of the Bee Journal and all its readers, from

Novice.

Sept. 11, 1869.

[For the American Bee Journal.]

Another Suggestion.

Mr. Editor:—I see some one has suggested the idea of a bee-keepers' photograph album with three yellow bands, for your gratification. Would it not be more appropriate to use one with *one* or *two* yellow bands, for the pictures of some of our Italian queen-raising brethren?

Allow me to suggest a sort of semi-fraternal bee-business directory. Few persons make apiculture a speciality, and I, (and I presume others) am often curious to know what *else* they do for pastime. Who has not wondered what "Gallup"* does? What is there in one's mental composition to cause "bee-on-the-brain?" Then, for the satisfaction of the mutually curious, let all correspondents send in their age, residence, vocation, and the extent to which they are interested in bees, and let the same be published in our most excellent American Bee Journal, with which we are well pleased.

J. W. Greene.

Chillicothe, Mo., July 15, 1869.

☞We like our correspondent's suggestion; but think he should have set an example, by carrying out his idea fully in his own case, in his communication.

A colony that contemplates swarming never seems to be as active and industrious as its populousness would induce us to expect.—Hofman.

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*We sent the leaf and flowers to Professor Porter, of La Fayette College, Easton, Pennsylvania, for identification, but have not yet received his reply.

*Gallup is a hard-fisted, hard-working farmer, who earns and eats his bread "in the sweat of his face."

[For the American Bee Journal.]

Worker Bees in Drone Cells!

Mr. Editor:—Early in July I put three frames of drone comb into a hive nine inches deep by five inches wide and twelve inches from front to rear. I also put in two pounds of bees and a very handsome queen, and gave them plenty of feed all the time, to make the queen lay, if I could. In a few days I examined them, and found an egg in nearly every cell. About the time for the drones to make their appearance, I looked at them, to see how they were getting along, and was greatly surprised to find, instead of drones, worker bees hatching from those drone cells. Not over fifty sealed drones could be found in the hive.

I let them work, and they still continue to rear worker bees in drone cells up to this day. The cells are sealed over even with the surface of the comb. Now I had supposed that, if eggs were deposited in drone cells, nothing but drones would hatch from them. At any rate, I shall not allow my bees to cheat me again in this way. I know how to fix them the next time.

Now, Mr. Editor, this experiment is something new to me; and I never saw anything of the kind noticed in print. Even our good friend Gallup never said anything about this thing, and I do not believe that he ever dreamed of anything of the kind. If any of the readers of the Bee Journal ever saw anything similar, I wish they would report.

H. Alley.

Wenham, Mass.

☞The case stated above by Mr. Alley, is of very rare occurrence, but not unprecedented. Gundelach, in his supplementary treatise of 1852, says that, on the 10th of August, 1851, he introduced a small driven swarm into a glass hive containing only a single comb, twelve inches square, composed of drone cells exclusively. The old colony from which this swarm was taken had been fed plentifully for a week previous, to keep the queen in egg-laying mood, as Mr. G. was curious to ascertain how she would act on finding herself restricted to a comb containing no worker cells. She seemed reluctant, in these circumstances, to resume laying, and did not do so until August 15, or after an interval of five days. On the 23d, the larvæ were sealed; and Mr. G. now became anxious to see whether the product would not be *uncommonly large workers*, as the cells had been closed with *flat* covers—the bees being evidently conscious that *workers*, and not *drones*, were being developed from the eggs. Compelled to leave home on the 5th of September, when none of the young had yet emerged, he opened a number of the cells, and found mature *workers* in them; and, in two instances, the inmates had already begun to cut their way out through the covers. These workers were examined very carefully, and not the slightest difference could be discerned between them and those reared in worker cells—they were not in any respect larger than ordinary workers.

Commenting on this case, in February, 1853, the Baron of Berlepsch suggests that, the determination of sex being the voluntary act of the queen, she can, if so disposed, lay worker eggs in drone cells, workers being still the product; but that *drone eggs are laid by a normal queen only when the colony contemplates swarming or designs to discard the old queen and rear a successor*—neither of which Mr. G.'s small colony can be supposed to have intended, and hence no drone eggs were laid or drones produced.—Ed.

[For the American Bee Journal.

Wintering Bees on Chicken Meat!

A New Thing Under the Sun!

Mr. Editor:—Perhaps I am wrong in thinking or writing as above, as possibly the matter is not new to others; but to me it is new, and it may not be without interest to some of your readers, who, like myself, never heard of such a thing before. For aught I know, a goodly number will say, when they read this article, just as I said when I first heard of it—"Pshaw, that's all *bosh!* I don't believe one word of it!" But, dear reader, just try it the coming winter, and then report through the Bee Journal.

But, "what is it?" methinks I hear you ask. Well, that is just what I am going to tell you.

Some time last spring there was at our house a young man from Hungary, (and he came *hungry*, and tired too; but that is not what I am going to tell you). He seemed to be quite intelligent; could speak several different languages; and was a very pleasant and agreeable talker. At home, in Hungary, he was a lawyer, and came to this country, as he stated, to learn the English language and observe American ways and customs. While walking about in our yard,

> Turning this way, turning that,
> All the *premises* to explore,

he caught sight of my apiary, and coming into the house, asked what those things were, scattered around in the yard? I told him they were my bees in Langstroth hives. He made quite a *foh* at the idea of keeping bees *in such looking things!* Then he went on to tell about the kind of hive used in his country. He said his father kept a great many bees, "but not in such shallow unshapely things;" they were long and deep. He told also, among a great many other matters, how they kept their bees through the winter; and that is just what I am going to relate to your readers for their edification.

He said—and I quote his words, as nearly as I can remember them—"As soon in the fall as it is cold enough to keep the bees at home, we kill a chicken and cook it whole. Then we dip it in honey, and hang it by the legs in the hive among the bees. We close the hive, leaving room for ventilation; and let it remain thus, on the summer stand, during the winter. In the spring, when the bees begin to fly, we take out *the bones of the chicken* from the hive, *the bees having eaten all the meat off!* Our stocks come out strong and healthy, and do not consume one-half the honey that those do which are not so fed with meat."

Now, I will warrant that nine hundred and ninety-nine out of every thousand who read this, will exclaim just as I did. But will not some one try this mode of wintering bees, and report success—*or failure?*

S. C. Palmer.

Windham, Ohio, July 16, 1869.

☞ A full account of this alleged Hungarian mode of provisioning bees for winter is contained in Lüttichau's "Suggestions for the improvement of Bee-culture in Saxony," which was published in Dresden, in 1778. Lüttichau is regarded by German apiarians as a kind of Munchhausen in bee-culture, and is commonly believed to have invented the story. But in this they probably do him injustice, as it is already given in detail in the "Transactions of the Economical Society of St. Petersburg," for 1776, and is there said to be the method employed by the Tartars, when, in unfavorable years, their bees have failed to lay up sufficient stores for the winter. It is also stated that the Tartars feed their bees with putrid fish in default of honey, and with the carcases of dead rats, mice, and other "such small deer."

Lüttichau likewise recommended feeding destitute bees with bread saturated with honey. This, he says, was formerly employed by the Hungarians, Poles, and Saxons, with great advantage—six or seven pounds of bread, thus prepared, sufficing to carry a populous colony safely through the winter, however poor in other stores it may be. But it would seem that he did not feed his own bees in this manner, for his servant Zschaller, who lived with him several years, says they were never so fed in that period. Heidenreich, who published his "Experiences and Opinions in Bee-culture," in 1796, states that he tested this honey-bread provisioning, with three colonies, in the fall and winter of 1778. The result was a complete failure—the bees dying before spring, and the hives being pervaded by dampness and mould. Others also, misled by Lüttichau's representations, tried it in 1783; but, as may be supposed, with no better success. We are not aware that any one, then or since, ventured to test the value of spring chickens as the "staff of life" in a bee community.—Ed.

Pollen gathered by the bees from the blossoms of sweet cherry and from those of currants, is orange color; gathered from those of celandine and veronica, it is cream-colored; pale green finch colored from those of plum and pear trees; yellow from maples and willows; bright yellow from butter-cups; saffron yellow from sour cherry trees, wall flowers, rape, sloe, and buckthorn.

The egg-laying of the queen is regulated and controlled by the will of the workers. When they want brood, they feed the queen liberally.

[For the American Bee Journal.]

Questions by Querist. No. 7.

Querist is still alive and reads the Bee Journal as much as ever; in fact every article is faithfully read. He desires to thank those who have been kind enough to try their pens at answering his questions in No. 6; but regrets that some of those questions are misunderstood. Henceforth he will try to be more explicit, so that there may be no more mistakes.

On page 55, volume 5, may be found this statement: "The first and highest law of nature in insects, is self-preservation in caring for offspring. The honey bee seems to be endowed with this instinctive impulse, for the purpose of preserving the brood in the hive." Now, is this statement correct? If the preservation of the *offspring* is the strongest instinct that governs the honey bee, then why does she remove unsealed larvæ from the cells, to make room for a rich harvest of honey? Mr. Otis, of Wisconsin, claims that the strongest instinct that controls the working bees is the *love of storing honey.* So it seems that the position taken by Mr. Seay is at variance with that of Mr. Otis, and one or the other must from necessity be in the wrong. Again, is it not a fact that, at times, the self-preservation of the matured bees, is far stronger than the love of offspring? Witness, for instance, the destruction of *drone* larvæ during a dearth in the honey harvest.

Mr. Seay has much to say about brood chilling. Where Querist lives, sealed brood is not very likely to chill during June and July—the swarming months; and but few bees are necessary to keep it at the proper temperature to mature.

On page 56, same volume, I find this:—"All artificial swarms should have their swarming propensity excited at the time they are being made. When that is done, and the combs are properly arranged in the hive, there remains no other reason why an artificial swarm will not gather as much honey, and build as much comb, in any given time, as a natural swarm." Whether there be any other reason or not, it is nevertheless a fact that, *during the first week*, an artificial swarm located in an empty hive, will not gather as much honey, nor build as much comb, as a natural swarm. Several attempts have been made by the Journal correspondents to give the solution of this problem; but none has, thus far, given one that is satisfactory. There are those among the Journal writers who can give the solution, and on this account the question is still open for discussion.

On page 57, Mr. Nesbit says that he guarantees all the Italian queens he sells, and notifies his customers that if they fail at any time to produce workers with *three* yellow bands, that he will replace the queen free of charge. The object of making this extract is not to find fault with friend Nesbit, nor to be personal; but to make an inquiry. The present standard of purity of Italian bees is the three *yellow* stripes on the worker progeny; but is that a proper test? Suppose, friend Nesbit, you should raise a hundred Italian queens, and all should produce workers thus marked, how many of those queens would *you* be willing to use for *queen-breeding* purposes? Would *ten*, yea say *five*, of those hundred queens be satisfactory to yourself? Querist desires to call special attention to this matter, as he observes that several parties are offering *pure (?)* Italian queens *by the quantity* at knock-down prices. The uninitiated will begin to think that *Simom Pure* Italian queens can soon be bought by the bushel, same as potatoes, beans, pumpkins, &c. More anon.

Querist.

[For the American Bee Journal.]

Observations and Experience.

Mr. Editor:—Having been a bee-keeper upwards of twenty years, though not very extensively in the business, I have been using the common box hive or linn gum, until within the last three years, when I introduced the Langstroth hive. I like that hive about as well as any I ever handled, except the National Hive, patented by Owen Davis, July 7, 1868. I have handled different patent hives, and find they all could bear a little improvement.

From my experience, I shall not say much at present about practical bee-keeping; though I will say a little in regard to the two races of bees. I have handled a great many bees this summer; and through the month of June I found the black bees almost entirely destitute of honey, and with scarcely any unhatched brood. In fact most of the black queens had quit depositing eggs, and I knew several colonies to die of starvation about the last days of June. Mine being all Italian bees, thirty hives in number, and being from home myself at this time, I became anxious to know their condition. As soon as I returned I examined my hives, and was surprised to find them all well stored with honey and in fine condition, plenty of eggs and hatched larvæ, and thousands of sealed brood. When the honey harvest set in now, my bees were ready for the rush of honey, and they made good use of it. I had several colonies that gathered ten pounds, per day, for ten days in succession. Right in the height of that harvest, we had a powerful rain. It rained for a week every day, which was a great drawback to the bees.

My bees filled the lower part of their hives, and a number of top boxes, while those of my neighbors did nothing in the boxes; and yet I have raised quite a number of queens this season, and had to draw on all my hives, to keep my nuclei strong. Still they kept up finely; and while the black bees killed off their drones, the Italians did not.

I have been reading the Bee Journal several years, and watching other men's movements, and will give my experience in practical bee-keeping more fully in a future article.

James W. Seay.

Monroe, Iowa.

[For the American Bee Journal.]

Removing Queen Cells no Preventive of Swarming.

Dear Journal:—I thought it was a fixed fact that if we examined our colonies of bees every eight days, and cut out all queen cells, that it would prevent swarming. Such, however, does not seem to be the case, as I tried it this season and failed.

I had a nice colony of Italians, which I got from Mr. Thomas, of Brooklin, Ontario, and I wished to see how many pounds of surplus honey I would get from them by preventing them from swarming. Myself and Mr. George Charles examined this colony every week, and cut out all the queen cells. Last Friday (23d) we cut out all therein, (seven in number), and, to our suprise, yesterday a large swarm issued. After hiving the swarm we examined the old colony, and found five queen cells just started, with an egg in each—queen gone. Can you account for this, or is it a common occurrence?

A. Malone.

Garden Island, Kingston, Canada, July 26, 1869.

Remarkable Accident—*Disastrous Effects.* A letter received at Louisville, from Princeton, Kentucky, speaks of a fearful accident which occurred on the 20th. A man named Boot Crow was hauling upon a wagon two immense millstones, one which weighed 2,850 pounds. While passing along the side of a high hill the heaviest stone rolled from the wagon and down the declivity with a fearful velocity, crushing small trees and shrubbery in its course. The house of a farmer, named Darwell, was situated at the foot of the hill. The millstone went crushing through a fence and into the yard at the farmer's house, where were a number of bee hives. In the yard were playing a bevy of children. The bee hives were upset, and in the confusion the bees lighted upon the children, stinging every one of them in a frightful manner. The progress of the great stone was not impeded in the least by its collision with the hives, and went bounding into a stock pasture beyond the house. It dashed into a herd of calves and horses, killing two of the former and one of the latter almost instantly. The children in the yard had been completely covered with the bees, and each one was stung by them until their persons were entirely covered with white swellings. One of them died a few hours after the terrible occurrence, and two others are entirely speechless and blind. They can hardly recover.

Those who suppose that, when a swarm issues, the new colony consists wholly of young bees, forced to emigrate by the older ones, if they closely examine the new swarm, will find that while some have the ragged wings of age, others are so young as to be hardly able to fly. —Langstroth.

THE AMERICAN BEE JOURNAL.

WASHINGTON, OCTOBER, 1869.

We had prepared, for this number, a translation of the certificates issued by the Committee appointed by the Salzgitter Apiarian Association, to test Mr. Lambrecht's ability to cause and cure foulbrood in a colony of bees, together with a more detailed statement of the action of the Committee, from the pen of one of its members; but want of room compels us to defer the publication of it until next month. It may suffice for the present to say that Mr. Lambrecht executed his assumed task to the satisfaction of the Committee; though we learn that some others, and among them several eminent apiarians, have expressed a doubt whether a fair test case had been made up, and hence claim that the result cannot be regarded as conclusive. Our readers will judge for themselves on reviewing the proceedings.

☞Since the communication from NOVICE, in this number, went to press, we have received from Professor Porter a reply to our inquiry for the name of the plant on the blossoms of which Novice's bees have been found foraging. The Professor says it is "the *Eupatorium ageratoides* L., (white snake root). It abounds in rocky woods and hills throughout the United States, and blooms most profusely in the autumn. The odor of the flowers somewhat resembles that of buckwheat blossoms. To me it is not specially agreeable; but, if the honey-gatherers get a good supply of honey and pollen from them, we must not find fault. I have never observed the bees working on them; and, in the case referred to, they may have been driven to it by necessity. Still, they exhibit no little caprice, or perhaps instinct; for the same flowers may not in all seasons and in all localities produce the same amount of honey."

May not this be one of the plants neglected by the common black bees, but resorted to with splendid results by the Italians? The latter have this summer, almost everywhere, where pasturage—in the usual acceptation of the term—was apparently very scarce, displayed a wonderful superiority over the former in gathering and garnering stores. This surprising result may possibly have arisen from their ability to resort to and derive supplies from some—perhaps from many—varieties of plants whose sweets are either inaccessible to or have no attraction for their shorter-tongued or less keen-scented cousins—though these have the probably undeserved reputation of being *universal* pillagers that

> "Make boot upon the summer's velvet buds,"

and gather honey all the day from *every* opening flower.

We would suggest to those who, in preparing their bees for wintering, have occasion to use a solution of sugar or sugar syrup as a substitute for honey, to mix with it a small portion of pure glycerine, to keep this feed from candying in the cells. As it does not evaporate or dry, we think it would have that effect, and thus prove beneficial in protracted winters. In Germany, where glycerine, as a by-product in the arts, is sold at a low price, it is largely used as bee feed, without any admixture; and it may therefore be regarded as a safe addition, when feeding must be resorted to, though it cannot, in this country, on the score of cheapness, come in commercial competition with sugar or other substitutes for honey.

We have received a copy of the recently published "ANNALS OF BEE-CULTURE," for 1869, edited by D. L. Adair, of Hawesville, Kentucky. It contains about twenty articles, carefully prepared by American apiarians and naturalists, and conveying much useful and interesting information, which cannot but be of service to those engaged, or intending to engage, in bee-culture. The publication is designed to be an annual—this being the first of the series, and will yearly present, in a compact form, a general view of progress and improvement in this department of rural economy. May it be adequately supported.

The "*Society for the Promotion of Bee Culture*," on the Lower Rhine, Prussia, have had in operation for three years past, an arrangement to give a course of instruction in the theory and practice of bee culture, gratuitously, every summer. Lectures on the general subject, and lessons in manipulation, are given daily. The course continues two weeks, and at the close, a public examination of those who attend takes place, premiums are conferred, and prizes are distributed by lot. The object is to excite in the community a more general interest in bee culture; to induce the formation of a model apiary in every parish; and to provide competent persons to take charge of them.

Correspondence of the Bee Journal.

COUNCIL BLUFFS, IOWA, Aug. 22.—My bees are at work on sunflowers again this fall, and are making more honey than I ever knew before in my life. I had a swarm come off on the 12th of August, and on the 21st I opened the hive and found every frame filled with honey and brood. This is a half-blood stock. My half-bloods have done better than the black bees, or the full blood Italians. Mr. Gallup thinks the hybrids are no better than the black bees. Perhaps he has some queens to sell. I got three swarms from one hybrid stock this season. The old stock and the two swarms filled one set of boxes, and the second set over one-half full. The third swarm is the one above mentioned. My hives are the Langstroth hive with three boxes, each holding eleven pounds of honey. I think that is pretty good for one colony in one season. From my other stocks, that only swarmed once, I have taken off fifty-eight pounds of honey each; and I think they will make fifty pounds more before the fall flowers are gone. The sunflower has been in bloom for two weeks, and my bees have filled some of their boxes in that time. We find it a very good article of honey. Last year the honey was strong, and we thought the sunflower was the cause of its rank taste.

We have some old fogies here that are in the bee business, but do not take your JOURNAL, though they borrow it of me, and are always in a hurry to see it, so that I have barely time to read it through. So I think when they read this, they will perhaps send for copies for themselves.—H. FAUL.

OSAGE, IOWA, Aug. 28.—My bees are doing well, and have been since the 8th of this month; that is, all stocks that were in a condition to do anything. I was from home on business frequently, and thus several swarms became so reduced in the period of scarcity, that I hardly think they will get in condition to winter.

When I have leisure I must give the readers of the JOURNAL a history of the season for bee-keeping. Any number of swarms perished here, between the 20th of June and the 20th of July; and many more became so reduced that they are entirely worthless. And what is curious, nearly every bee-keeper calls it *foulbrood.* One would imagine, from the local papers and talk in the country, that Iowa is a terrible region for foulbrood; and yet I have never seen a case of real foulbrood in all my experience.—E. GALLUP.

FULTON, ILLS., Aug. 30.—Bees are storing honey more rapidly here at present than I have ever seen them do before. I have one swarm storing in extra frames on the top, which I empty with the machine. It has, for the last two weeks, averaged five pounds per day of strained honey.

Bees are swarming here, now, as much as they did in June and July. Even hives that swarmed once already, in those months, are swarming again; and the swarms are larger than they were in June. Besides there is no end to wild flowers, and we shall get a good yield yet for the season, if fine weather holds for three weeks longer.—R. R. MURPHY.

WILFRID, ONTARIO, CANADA, Sept. 1.—This has been a poor season here for honey, but a good one for swarming; the yield of honey being just enough to keep the bees breeding and swarming all summer. From eight stocks that I had last spring, I hived twenty-four swarms, besides three sent back. I had a young stock cast a swarm, and on the eighth day I cut out the queen cells. On the twelfth day I introduced an Italian queen, at the entrance, in a wire cage with a cotton rag tied over the ends, and the bees liberated her the next day. I paid no further attention to them until the twenty-second day, (after the swarm came off,) when I observed them swarming again. I then opened the hive to see what was wrong, and found eggs and brood from the introduced queen; and, moreover, a queen cell with a living queen in it, from the old queen that left with the swarm twenty-one full days before. The queen in the cell was a small one, though not smaller than some others that I have. There can be no mistake about the time, for I have the dates noted of every transaction in my apiary.

I cannot do without the BEE JOURNAL, which I prize very much. Inclosed you will find two dollars for the current volume.—D. REEKIE.

SALEM, N. C., Sept. 5.—This has been a tolerably good year for bees. Out of forty-seven hives, I had thirty-five to swarm, which cast between seventy-five and eighty swarms. I had two swarms on the 25th of August.

The Italian bees have done very well; but the black bees have done poorly. I have been enabled to take about sixteen hundred pounds of surplus honey this season.

The prospects are good for an abundance of honey this year from the aster. Some seasons bees store from twenty-five to forty pounds, from this source.—J. W. HUNTER.

ALLENTON, MO., Sept. 8.—Bees have done well in this vicinity, in the way of swarming of stocks, but only very moderately in the way of storing surplus honey. I started in the spring with two Italian stocks. I now have nine good ones—had one stolen, and five good swarms left for the woods. I depended on natural swarming this year, being without experience in artificial modes; and having adopted a different hive from the one I commenced with, could not change from the old ones into the new. I think I shall have to adopt the artificial mode next year, seeing the swarms have such a predilection for running away.—T. R. A.

MADISON, WIS., Sept. 9.—The season in this part of Wisconsin has been better than the last. Although there has been a good deal of rain, which kept the honey thin, brooding went on nicely.

I have a honey pump, as the editor of the *State Journal* calls it. I made the outer case big enough to hold the inner one, and I revolve the whole. It worked very well. I could take out a gallon of honey with it in about ten minutes. But for a large number of hives the stationary outside case is best. Making and material cost about three dollars.

I winter my bees in clamps. The worst trouble, when I take them out in the spring, is that they rob each other, and the robbers kill the queens. I had ten killed in that way last spring. For a clamp I put about four inches of dry leaves on top of the frames. They wintered best, and kept their hives the cleanest, and could best stand the changes of the weather, after I took them out in spring.

When the basswood blossoms were at the best, one hive gave me fifteen pounds of honey in one day—I only emptied the combs twice, for after the basswood blossoms end, the honey season for surplus is about over with us. No honey in buckwheat. What the bees gather now will not keep them going. By the middle of November, the hives are one-half lighter than they were on the 1st of August.—S. McL.

Hamilton, Ills., Sept; 9.—Bees did very well here, this summer. Some of my stands have gathered not less than one hundred and forty pounds of box honey, each, from the 5th of August to the 8th of September, although having had eight cold and rainy days meantime. —C. Dadant.

Chillicothe, Mo., Sept. 12.—Ever since the wet weather ceased, about July 20th, the season has been all the bees could wish for. They have swarmed the most ever known here, and kept it up until the 7th of this month, all the usual preventives to the contrary notwithstanding

The honey season is now as good as it has been at any time, and bees are dropping by thousands before their hives, completely tired out.

The white clover is still in plentiful bloom; and buckwheat, smartweed, "yellow blossom" or Spanish nettle, yield honey in abundance.

If the weather should continue favorable as late as it did two years ago, the bees will work a month longer and get in a plentiful harvest. I put two natural swarms together, and they filled their hive and gave me sixteen pounds of honey in three weeks. Who beats this?—J. W. Greene.

Geddes, N. Y., Sept. 14.—Bees have done very poorly in this country, having made scarcely any box honey. I had six stocks in the spring; increased one-third. Have not got any box honey, and shall have to double up some stocks and feed to winter them.—H. O. S.

Dayton, Ohio, Sept. 14.—My bees have done very well, although this has been a poor season here, both for swarms and honey. I have wintered bees in almost all the ways recommended by your correspondents from time to time, but can only recommend "out door with protection" of "matting" or "straw," as safest and least trouble of any mode yet tried by me. I think your paper is more valuable every month.—E. D. P.

Rich Valley, Minn., Sept. 14—The season, though rather wet, has on the whole been quite favorable for the bees. Mine have done well, yielding an average of about fifty pounds of surplus honey per hive.

I am glad the Bee Journal is receiving the support of all intelligent bee-keepers. Every lover of bees should take it; and though I have not obtained any new subscribers for it yet, I shall not fail to speak in its favor whenever the occasion offers.—L. M. L.

New Rutland, Ills., Sept. 14.—Bees are doing splendidly in this section of country, this season.

Could not do without the Bee Journal for four times its cost.—W. G. B.

[For the American Bee Journal.]

Honey-Emptying Machine.

In the February number of the Bee Journal I noticed a description of a honey-emptying machine, but it was so inaccurately described that when I attempted to make one by the directions I found that it would be necessary to bore an inch hole through a three-quarter inch stick; and divers other things just as impracticable. So I gave it up, and made a machine on a plan of my own. I hand you a description of it below, and if any person will make one like it, he may depend upon having one that will do its work to perfection, and be smaller, neater, stronger, cheaper, and in every way better, than the one referred to. Mine cost me altogether about three dollars.

Thomas C. Hill.

Sydney, C. B.

BILL OF STOCK FOR HONEY-EMPTYING MACHINE.

Bottom Board, Midddle Cleat,	$\frac{5}{8}$ inch hole in centre.	$10\frac{1}{4}$ x $10\frac{1}{4}$ x $\frac{1}{2}$ $10\frac{1}{4}$ x $1\frac{1}{2}$ x $\frac{1}{2}$
2 Cleats		$9\frac{1}{4}$ x $1\frac{1}{2}$ x $\frac{1}{2}$
4 Posts		$19\frac{1}{4}$ x $1\frac{1}{2}$ x $\frac{1}{2}$
4 Side Cross-bars		$10\frac{1}{4}$ x $1\frac{1}{4}$ x $\frac{3}{8}$
4 End Cross-bars		11 x $1\frac{1}{4}$ x $\frac{3}{8}$
2 Braces, halved together, hole in about centre, pointed ends		$12\frac{1}{2}$ x $1\frac{1}{4}$ x $\frac{3}{8}$
4 Strips		$16\frac{3}{4}$ x $\frac{1}{2}$ x $\frac{3}{8}$
2 Pieces Wire Gauze		18 x $10\frac{1}{4}$
1 Shaft, Round Iron Rod		30 x $\frac{5}{8}$
1 Piece hard wood across top of can with a $\frac{5}{8}$ inch hole in the centre, for the shaft to revolve,		$18\frac{1}{2}$ x $2\frac{1}{2}$ x 1

The lower end of the shaft is pointed and rests in an indentation in a piece of iron soldered to the botton of the can. The shaft has a hole through it, two inches from the bottom of the can, through which is put a piece of stout wire $1\frac{1}{2}$ inches long to sustain the frames. This wire is let up into a groove in the cleat so as to turn the frame. The posts are let into the sides of the bottom board, flush, side and end. At each of the two opposite corners of the bottom board is made a mortice ⅞ inch deep, 1¼ inch long, and ⅜ inch wide, to receive the projections on the ends of the comb frame. The can is 21½ inches deep and 15½ inches in diameter; and the ends of the End Cross-bars (top and bottom) are rounded off, to make the frame fit into the can.

[For the American Bee Journal.]

My Bee-Feeder Costs Twelve and a Half Cents.

Here is a description of it, which, if you place in the hands of a tinsmith, he will soon make you one.

Take a piece of tin ten inches square and make a square pan one and a half inches deep, after it is wired. Punch a hole through the bottom with an inch and a half hollow punch. Make a tube to fit, one inch long, and turn a burr on the bottom end; slip it into the pan from the bottom and solder it tight. Now cover one-third of the pan with a piece of tin. It may be cut the size of the pan, then lay it on the top and solder it on. Through this tin there should be a small hole punched to receive a funnel. Cover the remainder of the pan with a piece of glass, held in its place by little hooks of tin in such a manner that it may slide on or off; and your feeder is done.

To USE IT. Slide off the glass, and put in some small pieces of comb, to keep the bees from being drowned in the feed. Then slide on the glass; remove the honey box and place your feeder directly over the hole in the honey board. Now insert a funnel and fill up your feeder; remove the funnel, and put a cork in the hole. The bees will rush up through the tube into the feeder, but cannot escape. Robbers cannot reach the feed, without passing through the entire hive. The glass enables you to see when the feeder is empty, and by removing the cork the bees may be fed without disturbing them in the least. Try it.

J. H. THOMAS.

BROOKLIN, ONTARIO, Aug. 30, 1869.

[For the American Bee Journal]

To Prevent Swarming.

Mr. F. Daniels complains that his bees swarm too much, and do not give him honey enough. Perhaps that is his own fault. Let him remove the queens from his colonies at the opening of the full honey season, and destroy any queen cells that may have been started; examine his hives a week later, and again destroy the queen cells; and ten days after that introduce a young fertile queen. He will then not be troubled with swarms, and his bees will store honey, if there is any to be found.

J. LITTLE.

POESTENKILL, N. Y.

[For the American Bee Journal.]

The Italian Fling.

We often hear of the "Highland Fling," and sometimes we read of the Italian fling. Mr. S. W. writes thus:—"It rained most of the time until July 20th, and my bees did not store much honey up to that time. Black bees have done as well as the Italians have. I see no difference." See BEE JOURNAL, vol. 5, page 65.

Mr. W. has an apiary of not less than two hundred hives of black bees, and it seems, from his own confession, that they did not store much honey prior to July 20.

James M. Marvin has an apiary of three hundred hives of choice Italian bees, only six miles from Mr. W.'s, and in not so good a location; and before the 20th of July he had more than a ton of machine honey put up in large crocks, and his hives were still so rich in honey that the queen could only now and then find a few empty cells to use for eggs. This shows whether the black bees have done as well as the Italians.

Mr. W. says he can see no difference between the working of the two varieties of bees. The reason is obvious; as plain as the nose on your face—much the same as the blind man's for not seeing the eclipse. Mr. W. has no Italian bees in his apiary, nor ever has had any, and I doubt very much whether he has seen a full hive of them during the past season. Further comment is unnecessary.

M. M. BALDRIDGE.

ST. CHARLES, ILLS., Sept. 14, 1869.

[For the American Bee Journal.]

The Challenge Accepted.

In the BEE JOURNAL for September last (volume 5, number 3,) a very broad challenge is given by Mr. G. P. Kellogg, of Waukegan, Illinois, to inventors, &c , of bee hives.

I am an inventor, manufacturer, and user of a hive, and will accept the challenge of Mr. Kellogg, with the following conditions, viz: Provided the hive he exhibits is his own invention previous to this date; that the exhibition be made in the State of Wisconsin, within fifteen months from date, at the State or some County Fair, or at any Bee-keepers' Convention in the North-western States. The sum put up for premium, to suit himself, not exceeding his limit of fifty dollars; provided this is not considered betting. If Mr. Kellogg accepts my proposition, he may name the place, &c.

A. H. HART.

APPLETON, WIS., Sept. 1869.

It is one of the laws of the hive, that bees which have no mature queen, seldom build any cells except such as are designed merely for storing honey, and are too *large* for the rearing of *workers*.—LANGSTROTH.

AMERICAN BEE JOURNAL.

EDITED AND PUBLISHED BY SAMUEL WAGNER, WASHINGTON, D. C.

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VOL. V. NOVEMBER, 1869. No. 5.

The Lambrecht Foulbrood Cure.

In the BEE JOURNAL for August we mentioned that the final report of the committee appointed to test Mr. Lambrecht's ability to cause and cure foulbrood, had not then reached us, though we understood it had been made. We have since received it; and as we know that many of our readers feel a deep interest in this matter, and as every apiary is liable to be invaded by the devasting malady, we subjoin a translation of the four certificates issued by the committee, showing how their proceedings were conducted, and stating as the result of the test that, in a healthy colony of bees, the disease had been produced and then cured, by the means employed by Mr. Lambrecht.

The colony for experiment was selected from the apiary of Mr. Gravenhorst, thoroughly examined by the committee, pronounced to be in a healthy condition, and then submitted to Mr. Lambrecht for treatment. This appears from

CERTIFICATE NO. 1.

BRUNSWICK, April 1, 1869.

The undersigned hereby certify that the colony of bees placed at our disposal by C. J. Gravenhorst, in one of his own hives, was found on examination to be in a healthy state, in good condition, populous, and with brood in all stages. After this examination was made, A. Lambrecht inserted, near the brood, a comb containing fermenting pollen and honey. The hive was then placed in the care of Mr. Gravenhorst, with the privilege of placing it half a league distant from his own apiary.

(Signed.) C. J. H. GRAVENHORST,
H. HERBST,
HENRY OPPERMAN,
H. WIEDENROTH.

When the committee again met and examined the colony, opinions were divided as to the existence of foulbrood in it, and the decision was therefore postponed for a month, to await the further development of the virus, if it existed; or the effect produced by the additional fermenting pollen inserted by Mr. Lambrecht, as shown by

CERTIFICATE NO. 2.

BRUNSWICK, April 24, 1869.

This day the above-named committee, accompanied by Mr. Lambrecht, repaired to the place where the experimental hive stood, and on examining the colony, regarded it as being only in an incipient stage of foulbrood. Though some dead and some suspicious-looking pupæ were observed, the committee was divided in opinion respecting the existence of foulbrood. This induced Mr. Lambrecht to insert a second portion of fermenting pollen and honey, and to desire permission to insert also two frames with old combs; which Mr. Gravenhorst was commissioned to do.

Signed by the Committee.

On a re-examination of the colony at the next meeting of the committee, all doubt as to its foulbroody condition appears to have been dissipated. It was evidently suffering from the disease in a highly aggravated degree; and the committee so state in their

CERTIFICATE NO. 3.

BRUNSWICK, May 23, 1869.

This day the undersigned re-examined the experimental colony. In the two old combs inserted on the 2d of May, they found cells with perforated and also with unperforated collapsed caps; and from these, when opened, a viscid, fetid, brownish-grey matter could be drawn; and the committee were fully convinced of the existence of foulbrood—especially as putrid larvæ were also found in the newly built drone comb.

Signed by the Committee.

The experimental hive thus found to be infected with the disease, was now turned over to Mr. Lambrecht for restorative treatment; and on the 27th of July the committee re-assembled, to ascertain the result of Mr. Lambrecht's curative process. On a minute examination, the colony was declared to be again entirely free from the disease and in a prosperous condition. This apears from the committee's

CERTIFICATE No. 4.

BRUNSWICK, July 27, 1869

At nearly four o'clock, this afternoon, the Investigating Committee met to examine the experimental colony. The combs were taken out separately, and subjected to repeated minute inspection; and to make the examination most thorough, the bees were brushed from the combs, and every cell inspected. According to our best knowledge and belief, we found the colony populous, nearly ready to swarm, with queen cells prepared for capping, and the whole colony in such excellent condition that we could pronounce it entirely free from malignant foulbrood.

(Signed.) H. WIEDENROTH,
H. OPPERMAN,
C. J. H. GRAVENHORST,
H. HERBST.

A neighboring beekeeper, Mr. Ahrens, apprised of the intended proceedings, also attended the meetings of the committee, participated in the examinations, and gives the following statement of what took place:

"Feeling great interest in the experiment prosecuted by Mr. A. Lambrecht, to cause and cure foulbrood, I attended the examination of the experimental colony, when it was found infected with foulbrood in the highest degree. I was again present to-day, when it was re-examined by the committee and pronounced perfectly cured. The colony was nearly ready to swarm, and in all respects in admirable condition.

(Signed.) "C. AHRENS,
"Practical Apiarian."
"BRUNSWICK, July 27, 1869."

In addition to the forogoing, Mr. Gravenhorst, a member of the committee, himself a highly intelligent and experienced apiarian, and originally disinclined to accept Lambrecht's theory of the origin and nature of foulbrood, communicated to the *Hanover Centrablatt* the following more detailed account of the action of the Committee and of Mr. Lambrecht's process for the production and cure of the disease. It was written before the final report or decision of the committee was made; yet manifestly under the conviction that a perfect cure had been effected:

"It is well known to the reader that at the fall meeting of the Saltzgitter-Brunswick Union, I expressed my readiness to place one of my colonies at the disposal of a committee this spring, to test Lambrecht's theory of foulbrood. Accordingly, when the appointed committee (of which I am a member, and two members of which are practical beekeepers,) met on the 1st of April, I selected for them a strong colony, the bees of which covered six frames in a hive built two-thirds full, though its supply of honey and pollen was quite limited. After the committee had thoroughly examined this colony and pronounced it entirely healthy, Mr. Lambrecht introduced in it fermenting pollen mixed with honey, and the hive was then removed to a place half a league distant from my apiary

"The second examination of this experimental colony was made by the committee on the 24th of April. Lambrecht and Herbst regarded it as being in an incipient stage of foulbroodiness, whereas Wiedenroth, Opperman, and myself were constrained by our convictions to regard it as still in a healthy condition. Wiedenroth directed his attention mainly to the drone cells, in which, according to his experience, foulbrood usually first manifests itself; whilst I could not allow myself to admit the existence of the disease until I saw all the indications of it, as I find them stated in the writings of acknowledged authorities. Lambrecht then requested leave to insert two frames with old comb. This was done on the 25th of April, and next day eggs were discovered in the cells of these combs. On a revision on the 20th of May, I discovered the first decided symptoms of foulbrood, in the cells of these old combs, some of which still remained capped, though from others young bees had emerged. Minute perforations were visible in the collapsed covers of most of the cells still closed; and when one of these cells was opened a brownish-grey, viscid, fetid matter could be drawn out. Hereupon I called a meeting of the committee, which assembled on the 23d of May. On examination, putrid brood was found in the drone cells also, and the colony had consequently to be regarded as foulbroody. But, that no hasty decision might be made in a matter so important, the essay to cure the colony was, at my instance, deferred to a future day, as I wished previously to satisfy myself fully that we had really before us a case of contagious foulbrood. Thenceforward, beekeepers who visited me, and many of whom were acquainted with the disease from sad experience, were taken to see the experimental colony; and all of them were satisfied that foulbrood existed therein. Still not content myself, and desiring to obtain absolute certainty if possible, I requested Mr. J. of Baden, who I knew was troubled with foulbrood in his apiary, to send me a piece of infected comb; the appearance and odor of which, when received, were in no respect more marked than those of the infected combs in the experimental colony. There were diseased, collapsed, and perforated cells interspersed among others still healthy, and putrid larvæ among others not affected by the disease. Verily, a foulbroody comb presents a checkered aspect, grievous to behold, and saddening to the heart of every beekeeper! Melancholy, too, is it to observe the persevering yet fruitless efforts made by a still strong colony to subdue and eject the insidious foe, by tearing out and removing the infected brood—while the disease is steadily progressing, the population daily diminishing, and the entire colony hastening with accelerated speed to its lamentable fate. If help be still possible here, thought I, it is high time to invoke it now. Lambrecht was accordingly invited to Brunswick, to undertake the cure of the diseased colony. He came on the 17th of June. On seeing its condition, now thoroughly foulbroody, he exclaimed: 'Here extraordinary means must be resorted to. A week ago the cure would have been easy; now it will be more difficult '

"The hive was then carried into a chamber. Mr. Lambrecht took out all the combs, placing them, with the adhering bees, in a box prepared for them; shook the remaining bees out of the hive on a sheet, with which he covered the box when the bees were again united. He now employed some preparation to disinfect the hive, and remove from it the matter of disease. To this end he placed live coals in a dish, sprinkled on them a mixture of various powders procured from a drug store, and inverted the hive over it. Though it was a very compactly constructed straw hive, and well coated inside with propolis by the bees, the fumes penetrated through it, and issued from every pore Lambrecht then, by means of a syringe, wetted the interior of the hive with a liquid prepared by him, scoured it well, and furnished it with frames filled about three-fourths full with combs built last summer, placing between them a comb with honey. He next brushed the bees from the infected combs into the hive, fumigated them slightly, and replaced the hive on its stand. The foulbroody combs were then melted, though I retained a few small pieces as specimens.

"If Lambrecht succeeds, as we doubt not he will, in performing the second part of his assumed task—the cure of the foulbroody colony—as effectually as he did the first part—the origination of the disease, science will thereby have achieved for beeculture a triumph, the value of which cannot be over-estimated. None will know better how to appreciate its importance, than he who has had the misfortune to become practically acquainted with the devastating malady.

"C. J. H. GRAVENHORST."

"BRUNSWICK, June 18, 1869."

In a subsequent communication to the *Bienenzeitung*, Mr. Gravenhorst says that he and Mr. Lambrecht examined the colony on the 18th of July. Sealed worker brood was found in the newly built worker comb extensions; sealed drone brood in five combs, and from twelve to fifteen queen cells on three combs. In the lower part of the combs eggs and healthy larvæ were seen in the cells with no further trace of foulbrood. The queen cells and drone brood were destroyed to keep the bees from swarming, as it seemed likely they would do so in a very few days; but on the 27th of July, when the final examination and report was made by the committee, three new queen cells, nearly ready to be sealed over, were found. Mr. G. refused an offer of four dollars for this experimental colony, and said he would hardly be willing to part with it for nine dollars, as it was in one of his best hives, and, being very populous, would probably gather considerable surplus honey before fall.

Healthy stocks almost always destroy their drones, as soon as forage becomes scarce.

[For the American Bee Journal.]

The Native Honey Bee of Australia.

I am indebted to Mr. F. Smith, the distinguished hymenopterist of the British Museum, for the following description of the native Australian honey bee, a nest of which reached me through the kind offices of Messrs. Veitch, of Chelsea. Although the bees were alive when shipped from Brisbane, in Queensland, they had evidently perished long before the termination of their voyage. This fatal result is, however, less to be regretted, since it is evident that their power of honey-gathering must be perfectly infinitesimal as compared with those of either of the European races.

T. W. WOODBURY,
"A Devonshire Beekeeper."
MOUNT RADFORD, EXETER, ENGLAND.

NOTES ON THE ECONOMY OF TRIGONA CARBONARIA, A STINGLESS HONEY BEE OF AUSTRALIA, WITH A DESCRIPTION OF THE INSECT AND ALSO OF ITS NEST.

The beautiful example of insect architecture received from Brisbane, in Queensland, Eastern Australia, is specially interesting. Judging from its structure, it apparently indicates the economy of a genus of bees intermediate between the hive bee and the well-known humble bee.

Hitherto we have possessed very little information respecting the economy of the genus Trigona. The females are unknown; the other sexes—male and worker—have been received from Brazil. The closely allied genus Melipona includes in the opinion of some authors, the species that I separate and retain in the genus Trigona. Of the former genus we possess a knowledge of all the sexes, and have ascertained that each community contains a number of females; in which part of their economy they agree with the humble bee. We may therefore expect to find the economy of Trigona similar in that respect; such, I have little doubt, will prove to be the case.

On examining the nest from Brisbane, we observe another particular in which the economy of the species agrees with that of the genus Bombus. Numbers of semi-globular receptacles for honey are found, some placed side by side, others over each other, and some suspended in the ramifications of the coral-like shaped branchings constructed over and above the proper nest, that which contains the combs of the hive. These receptacles may appropriately be called honey pots, and serve, I have little doubt, to contain all the honey collected for the requirements of the hive; no honey, so far as I can ascertain, being stored in the cells of the combs—these being apparently appropriated solely to the rearing of brood.

On making an opening at the back of the box that contained the nest, and against which it was built, a sight of the combs was obtained. They proved to be arranged horizontally, with the mouth of the cells downwards, as in the combs of wasps. The arrangement of the combs, however, cannot be compared, in regularity and beauty, with that of the wasp.

No sign of honey in, or of there having been any in, the cells could be traced. All appeared to be appropriated to the rearing of brood. Such I also found to be the case in a large mass of comb from Panama.

Much still remains to be learned respecting the economy of these bees. The nest from Brisbane has thrown much additional light upon the subject; and will, I trust, stimulate entomologists, who visit countries where the genus Trigona is found, to investigate thoroughly the economy of these bees. All that is at present known amounts to little that is satisfactory, being principally grounded upon conjecture.

The nest of the Trigona from Brisbane cannot be looked upon as a perfect example of the structure usually built by that species. It was constructed in a situation forced upon the bees; consequently they had to contend with the difficulties of the situation.

The form of that part of the nest which contains the combs, is that of half a fir-cone; the flat side being placed against the back of the box. The external surface is very irregular, and consists of a multitude of flat overlapping layers, some of the larger ones being upheld in their position by upright supports or columns. Branching off in various directions from the external plates is an intricate ramification, closely resembling the roots of shrubs or plants; or perhaps most like the beautiful branching of corals. As the nest is increased in bulk in the process of building, the flat layers described serve as the foundation whereupon to construct cells. Some of the honey pots previously mentioned are suspended on the branches above the nest; but the majority are constructed in heaps, frequently over each other, at the base and outside of the proper nest; others in more regular order, side by side. An orifice is always to be found on one side, enabling the bees to obtain the honey stored in each. The general color of the nest is a reddish-brown. A portion of the old nest, taken with the bees and placed in the box, is nearly black.

The TRIGONA CARBONARIA is a small bee, smaller than the house-fly. It is coal-black and shining; it has on its face, on the thorax, and beneath and on its sides, a covering of very short down or pile. The tips of its jaws are obscurely reddish, the wings are clear and transparent, and the abdomen is glossy black.

F. SMITH.

In arts and manufactures, practice almost invariably precedes and moves in advance of theory. The latter comes limping along in the rear, scrutinizing facts, comparing observations, elucidating processes, and explaining results, in accordance with the existing state of science.—DR. JAHNE.

☞Those of our readers who have inquired about the temper of the East Indian bees—*Apis dorsata*—will obtain the desired information from the subjoined article.

[From the London Gardeners' Chronicle.]

Ferocity of East Indian Bees.

Many stories have already been related by "our *Journal*," illustrative of the ferocity of the large Indian honey bee, *Apis dorsata*. To these I now add the following:

The first is extracted from a note just received from an Indian officer, at present residing in my neighborhood: "In my last letter from India I hear that an officer of my regiment has just arrived in Cashmere, after a fearful march through Chumba, where he was attacked by a swarm of bees. He took off his coat, and tried to defend himself with it as long as he could; but the venomous brutes got around him, and he had to execute a retrograde stragetic movement, followed by the infuriated insects for four miles and a half, when his powers of running drill being exhausted, he had to give in and let them have their wicked will of him, the natural consequence of which was that he got fever very badly, and had to be carried into Islamabad in a jampan, constructed of branches of trees and grass rope. Not a bad story this of the gorgeous Himalayas! Sweet things, our Indian bees, are they not?"

Another Indian letter says:—"The wild bees of India are very dangerous customers, as they attack any animal that happens to disturb them; and it is even said elephants have died from the inflammation caused by their stings. Two years ago, in Agra, the R——'s lost both their carriage horses at the church door on Sunday morning, and the coachman was very nearly killed too. Fortunately the other people had all left, or it would have been much more serious. Something disturbed one of the nests in the church steeple, and the bees all settled on horses and carriage."

General Sir Andrew B. Waugh, late Surveyor General of India, who was on the Committee of the Geographical Section of the British Association during its recent visit to our ancient and loyal city, also informed me that these bees were the great enemies of tiger-shooters, for if by any chance, during their progress through the forest, the elephant happened to shake a tree in which was one of their nests, down would come the bees, and off would go the elephant crashing through the jungle in uncontrolable terror, whilst the overhanging branches swept everything and everybody from his back. On mentioning this to the writer of the note first quoted, he fully confirmed it, and described how on one occasion a gentleman, weighing at least fourteen stone, and therefore as remarkable for his bulk as his bravery, was discovered in a most unenviable predicament, clinging for dear life, with the wind knocked out of him, to a branch of a tree, some dozen feet from the ground, and from which he was afraid to drop, as much out of regard for his limbs as from dread of certain imaginary tigers, which he fancied were prowling around him in all directions After assisting him to decend from his uncomfortable perch, it was found that he had been incontinently deposited thereon in the course of an elephantine stampede, produced by bees.

T. W. Woodbury,
"A Devonshire Beekeeper."
Mount Radford, Exeter, England.

Ohio Bee-keepers' Convention.

Pursuant to arrangement, the bee-keepers in attendance at the State Fair, in Toledo, Ohio, met on the evening of September 15, 1869, and were called to order by the Vice President, Mr. J. T. Merriman. The Secretary being absent, Mr. J. T. Martin was elected Secretary *pro tem.*

The first question proposed for discussion was—"The practicability of artificial swarming." Mr. Merriman opened the discussion by explaining his method of propagating bees, or the advantages of artificial swarming. He recommended but one division of each colony in a season; and that not unless they are in a good strong condition.

Mr Martin recommended spring feeding, so as to stimulate breeding, and by this means to get the colonies all good and strong, as early as possible; and by the time the raspberry blossoms open, artificial swarming can and ought to be resorted to by all bee-keepers who wish an increase of stocks. If cold or rainy weather should set in, the young colonies must be fed.

Colonel Leffel approved of artificial swarming and recommended the latter part of May or first of June, according to the season.

Mr. Wright agreed with the Secretary in his mode of treatment; urging bee-keepers to investigate the subject, and with little trouble they could so increase their stocks as to make bee-culture remunerative.

Mr Benedict gave his mode of spring treatment, which was to stimulate breeding by cautious feeding; and so soon as the frames are well filled with brood, then is the time to divide, and not before.

Dr. Conklin agreed with Mr. Benedict, in the mode of treatment; but advised putting a division-board in the centre of a strong colony. The queenless half will then rear a number of young queens, which, when nearly ready to leave their cells, can be taken out and given to colonies that, by dividing, are left queenless.

Mr. H. M. Thomas, of Brooklin, Ontario, would not think of keeping bees in any other way. Bee-keepers, to be successful, must learn the process of artificial colonizing. It is the only road to success.

Mr. Carpenter never made artificial swarms, and could not speak from experience. He was there to learn.

Mr. Gray believed in strong stocks; made strong artificial colonies by giving *all* the bees to the young *stocks*, and placing the old hive, with nothing but comb and brood, in the place of a strong colony; or, in other words, making three colonies from two. Do this about the time nature says it is time for natutal swarming. He recommended having fertile queens, or royal cells capped over, to introduce to young colonies.

The second question discussed was—"The best mode of introducing Italian queens."

Mr. J. H. Thomas, of Ontario, Canada, gave his experience, and recommended the following plan: *First*, have ready a shallow dish or cup-plate, with a wire gauze cover. *Second*, remove the black queen from the hive, and then empty two drachms of chloroform into the shallow dish. Put the wire gauze over it, and place it immediately under the bees; leave them thus twenty minutes, when the Italian queen can be placed either at the top or bottom among the bees, in perfect safety. No danger of injury to the colony; if the bees fall they will recover.

Mr. H. M. Thomas inquired under what condition of a colony it was most difficult to introduce a queen? After a general interchange of views between Messrs. Merriman, Martin, Wright, and Gray, Mr. Thomas gave an interesting account of the difficulty he had experienced in introducing a queen to a queenless colony having no brood.

He was of the opinion that the greatest difficulty would be found in colonies having fertile workers; or when the colony is queenless and has no brood, especially in the latter part of the season.

Mr. Wright related a singular sight he had witnessed in a queenless colony of his. He said he found as high as fifteen eggs in one cell, and believed that there were thousands of workers laying eggs in the colony. On one frame he discovered dozens of workers laying while he held the frame out of the hive.

Mr. Gray remarked jocularly that the Professor's *funnigreec* would have to be used in introducing a queen to a colony in that condition.

Mr. Benedict would like to hear something about the honey-emptying machine.

None present had used it, except the Messrs. Thomas, and they recommended its use, especially when honey is the main object of the bee-keeper. The newest and tenderest combs can be emptied without injury, and returned to the hive; thus saving the necessity of building new combs.

Mr. Thomas remarked that the standard of bee-culture was higher in Canada than appearances indicated in Ohio; and extended a cordial invitation to all present to attend their Provincial Fair, to be held in London, commencing September 25, 1869.

Mr. Gray then exhibited specimens of bees from Mount Lebanon and the Island of Ceylon; also living Egyptian bees.

A vote of thanks was tendered Mr. J. B. Hoag, for the use of his parlor; whereupon the Association adjourned to meet in Cleveland, at the call of the Secretary.

J. T. Merriman, President.
J. F. Martin, Secretary *pro tem.*

It would be interesting, could we learn how bees become informed of the loss of their queen.

Michigan Bee-keepers' Convention.

The MICHIGAN BEE-KEEPERS' ASSOCIATION met in the Board of Trade's Rooms, in Jackson, Michigan, on Tuesday, September 21, 1869, President Rood in the chair.

On motion, Messrs. Flanders, Baldridge, and Moon were chosen a committee to report topics for discussion.

It was voted that a committee of three be appointed to arrange for exhibition of honey and to judge upon the merits of the same. Messrs. Cook, Townley, and Beall were elected as such Committee.

A. F. Moon was appointed to make arrangements for informing people of our meetings.

The Committee on Topics then reported the following question for discussion:—"How can we prepare our bees for wintering the most successfully?" The report was accepted and the question discusssed.

Mr. Moon, of Paw Paw, preferred out-door wintering; would place his hives on a box-platform and fill around them with straw. He would shelter his bees from the sun; otherwise they would fly when the weather was too cool for a return to the hive. Bees, in common with all animal life, require plenty of pure air. If well ventilated from below, he considers them safe. Close attention should be given to the bees in the fall, and the honey in the different hives equalized, the bees not having too much or too little. Twenty-five pounds is enough for a good colony; and no attempt should be made to winter any other. Some empty cells are necessary for successful wintering. Honey so thin that it would ooze through the cap was to be avoided. He thought bees never froze to death. The only requisite to life and health was plenty of food and air. He thought hiving dangerous, and hence looked on it with little favor.

Messrs. Marvin, Rood, and Flanders argued in favor of depositories, as by careful housing much honey would be saved; it being a principle in the economy of animal life, that more food is required to keep up the animal heat in a low temperature.

Messrs. Rood and Flanders would have a double-walled house; the walls being from fifteen to twenty inches thick, filled in with saw-dust. Would have pipes for ventilating above and below, arranged with valves so as to contract or expand the aperture, and so made as to admit no light. To accomplish this the upper pipes were long; the lower in the saw-dust filling about level with the ground, opening to the air at one corner, and to the room at the opposite corner of the house. By having the hive open above, all moisture would pass off. If thick walls would not keep the temperature at about 35°, a large snow bank should be kept near and appropriated, if necessary to keep the temperature from rising.

Mr. Marvin, of St. Charles, Illinois, thought a dry sandy cellar was good for wintering bees; yet he preferred to house as described above. With the emptying machine honey could be extracted if the combs were too full; and if the honey was too thick or too thin, it could be extracted, and by adding water, or by evaporation by heat, could be brought to the proper consistency. The amount of honey necessary for wintering depended on the number of bees, age of queen, and amount of young bees—a young queen and young bees requiring more honey. There should always be young bees present for the fall, also young brood.

Mr. Campbell, of Royal Oak, believed in housing. Old methods would not avail. To compete with progress in bee-keeping we must discard old ideas and be up with the times. He thought the time of box hives and out-door wintering was of the dead past.

Voted that our sessions be held at 7½ o'clock, morning and evening.

SEPTEMBER 22D—MORNING SESSION.

Motion prevailed that the election of officers be made the special order for Thursday evening.

Voted that members only be allowed to compete for premiums on honey.

Resolution passed: That an annual fee of fifty cents be required of each member of the association.

The Secretary related a case of transferring a swarm of bees, filling all the frames, except one on each side, with combs some of which contained brood; and the bees all leaving the hive and going away.

Mr. Baldridge had never known such a case. Probably the bees were ready to swarm and did not lose the impulse. He would have all the empty frames on one side.

Mr. Marvin thought the bees had become too full of honey; and this, with the heat, caused them to leave.

Mr. Moon had known one or two similar cases. He thought it could not be heat, as there was abundant empty space in the hive. It could not be swarming, as there were no bees left in the hive. He thought they were offended at something, and would not stay. If bees were very plenty he would leave space in the middle of the hive.

The President remarked that you could tell from which hive a swarm issued, as there would always be young bees laying in front of the hive.

EVENING SESSION.

The Committee on Premiums reported in favor of two premiums of $3.00 and $2.00 on the first and second best honey, and a premium of $2.00 for the best hive exhibited by members. The report was accepted, and the recommendation adopted.

Messrs. Campbell, McKee, and Wolcott were appointed judges of hives.

The Committee on Topics then reported the following questions for discussion:

1st. What is the best location for an apiary, and how should the hives be arranged?

2d. What are the merits of Alsike clover as a forage, honey, and fertilizing plant?

3d. Is the honey-extracting machine a success, and will it extract the honey and not injure the brood?

4th. Is the AMERICAN BEE JOURNAL worthy of support?

The first question was discussed:

Mr. Baldridge would exercise great care in the selection of a location for his apiary. Would wish for an abundance of the best honey-producing plants, as basswood, willow, white clover, dandelion, fruit trees, wild plum and thorn, and alsike clover. Would have his hives front southeast, so as to gain the earliest warmth of the sun. Would have the board on which the hive set not more than four inches from the ground, resting on 2 by 4 scantling. Would have his hives thus low, to permit easy ingress, and to avoid heavy winds. He thought hives should be six feet apart, and the stands should not be continuous, as the handling of one hive would thus disturb the others. A sheltering grove, to protect from the noon-day sun, is very desirable.

Mr. Moon would have his apiary surrounded by good pasture lands, as they were always near to flowers. Would have his stands at least a foot high, to protect his bees from toads, which greatly admired bee-diet, and were ever on the alert to gratify their taste. He placed his hives on a stake. Would have an alighting-board in front of his hives, always keeping the grass closely mown.

Mr. Peterman would keep his bees low—had never been troubled by toads.

The President kept a trough with water near his bees. To keep the bees from drowning, he put in cobs and changed them often enough to keep them sweet. He thought the hives should be 10 feet apart and of different colors.

Mr. Marvin thought the hives should be a good distance apart. He would save bees by keeping his hives low. We could cage our toads.

Mr. Campbell would protect his bees from west winds; and would have an inclined alighting-board reaching from the stands to the ground.

Mr. Beall would have his hives low, as he preferred drones to the king bird, which he knew to be a voracious feeder on both workers and drones.

ALSIKE CLOVER.

Mr. Townley had had one year's experience. Had a field of 4½ acres, which commenced to blossom the first week in June, and by the 15th it was in full bloom. It was still in flower on the 22d of September. He cut from his field 19 loads of hay, from which he threshed 16 bushels of seed. His cattle would not feed on a red clover pasture, if they could get alsike. The hay, unlike red clover, is good after the seed is threshed from it; the stalk still remaining green after the seed is ripe. It could be threshed in a common clover machine.

Mr. Baldridge said it would live for days with the ground covered with water. His field was in blossom from the 1st of June until the 1st of August, and covered for the whole time with bees. Bees would go for miles to obtain the honey from alsike clover. He thought it an admirable thing for the clover that the bees worked on it, as it was thus far more perfectly fertilized. He thought the clover added to both pasture and hay, as it imparted flavor. He regarded the present price of the seed as not extravagant, as a bushel would sow three times as much land as the same amount of red clover seed.

Dr. Conklin found it very valuable for honey, and said it must also rank first as a fertilizer.

Mr. Moon not only got a better growth than from his red clover, but found that it was preferred by his stock, especially his sheep.

Mr. Marvin said four pounds was quite enough seed to the acre. Difference in soil produced difference in size, and, with Mr. Baldridge, thought this would account for the difference of varieties as grown by Mr. Thomas. He said it would thrive well on dry clay land, where white clover would do nothing at all. He thought it better to harrow in the seed.

Mr. Wolcott sowed three pounds three ounces of seed to the acre. He purchased the seed from Mr. Townley. It did well, blossoming from the 15th of June until now, and was constantly covered with bees.

HONEY-EXTRACTOR.

Mr. Rood had tried the honey-extractor, and believed it next to movable frame hives as an aid in bee-culture. No one could appreciate its value till he tries it. No apiarian could afford to do without it, as the saving from the repeated use of comb, for storage, is immense. The quality of the honey is much better than when obtained by straining.

Mr. Baldridge said, by care to produce a slow uniform motion, the larvæ could all be left undisturbed, and the honey all taken clean from the comb. He could remove 100 pounds per hour. He had taken from a single hive, during the present season, 175 pounds of liquid honey, and forty pounds of box honey; and could have taken still more, such was the value of saving the comb.

Mr. Marvin said this machine would pay for itself, if only used with one hive for a single season. The honey would sell rapidly, as soon as known. With experience, one could throw out just what he wished.

SEPTEMBER 23, 1869.

Mr. Beall wished that, in some way, we might enlighten people on the subject of beekeeping. He believed if such a result could be accomplished, it would work much good, not only to individuals but to society.

Mr. Moon said all should send names of persons who would be interested in the subject to the BEE JOURNAL. They would perhaps subscribe.

Dr. Conklin would bring a little manual of bee-keeping before the people, giving a succinct view of the whole matter, and written in a style so clear, vigorous, and sprightly withal, that it would gain universal attention.

Mr. Baldridge thought that, by skilful management, the Association might be able to distribute such a work at a very cheap rate, if not gratis.

The Secretary thought this a matter of great importance, as the dissemination of truth not only aided industry and increased capital, but also led to higher intellectual attainments, and what was still more desirable, raised the moral tone of the people, and especially was this true in relation to truths connected with natural history.

Mr. Marvin said our Agricultural College was doing efficient work in this direction.

Messrs. Cook, Baldridge and Townley were chosen a Committee to give the subject consideration, and to confer with scientific men, and report a plan of procedure at next meeting.

The Association then proceeded to discuss the following question;—Can a country be overstocked with bees?

Mr. Baldridge said bees at St. Charles, Ills., work for five miles around; flowers were plenty, and hundreds of colonies might be kept.

Mr. Marvin advised killing half our stock. We could care for the remainder enough better. The honey and comb being given to them in spring, would stimulate to increased labor; and having comb already, they would early store a great quantity of surplus honey; and they would also breed faster. He would only kill if stands were too numerous and food unobtainable.

Dr. Conklin inquired why destroy the bees? We have plenty of food for all; and one dollar will furnish a hive of bees with all the food that will ever be needed to winter them.

EVENING SESSION.

The Constitution was amended so as to make the Executive Board consist of the President, and Vice President and Secretary, instead of the President, the Secretary, and an Executive Committee of ten. The Association then proceeded to the election of officers. E. Rood, of Wayne, wished to be excused from longer serving as President, on account of age and ill health. The election resulted as follows:

President—A. F. Moon, of Paw Paw, Michigan.

Vice President—H. Huff, of Jonesville, Michigan.

Secretary—A. J. Cook, Agricultural College, Lansing, Michigan.

Treasurer—R. G. McKee, Laingsburg, Michigan.

The Committee appointed to judge as to the merits of hives, awarded the first premium to H. Huff, who exhibited the Thomas Hive. This hive, in their judgment, being the most simple, most easily constructed, and most accessible to the apiarist, possessing also the merit of durability.

The judges on honey awarded the first prize to E. N. Shelk, of Three Oaks, who entered a large box of beautiful basswood honey in the comb. The second prize was granted to M. M. Baldridge, who exhibited a can of most excellent honey which was extracted by his machine.

FEEDING BEES.

Mr. Marvin used tight-bottomed hives, turning the honey into the entrance.

Mr. Baldridge preferred upper story hives, and would feed honey in frames or comb.

Mr, Moon thought it often paid to feed sugar. He dissolved five pounds of coffee sugar in one quart of water. Poor sugar should never be used to feed bees.

Mr. Mason thought it better to add more water, and then boil down. It made a better syrup.

The Secretary thought the best way was to equalize honey by changing frames.

The President and others thought the same, if there was honey enough to spare.

President Rood wished his swarms to have twenty-five pounds of honey, each. He took frames of honey from those that had more than this, and gave to them that had less.

Mr. Baldridge said he would only feed honey, and if there was none to spare, he would destroy some of his bees.

Mr. Moon thought it far more profitable to feed sugar and save all the bees.

AMERICAN BEE JOURNAL.

All who read this Journal spoke in the highest terms of its excellence; and it was the unanimous opinion that no beekeeper could afford to be without it. Many of the first apiarists present coupled this with "Langstroth on the Honey Bee," giving to both the highest meed of praise. The one the best periodical, the other the best treatise on bee culture, in the English language.

Upon inquiry it was found that more than eleven hundred swarms of bees were owned by members of this Association.

There were a large number of patent hives on exhibition.

The Secretary, on behalf of the Society, would thank Messrs. Rood and Baldridge for donating their premiums to the Association.

A. J. COOK,
Agricultural College,
Lansing, Mich.

[For the American Bee Journal.]

Bees and Hives at the New York State Fair.

MR. EDITOR:—While being at the State Fair at Elmira, I wished to learn what I could about bees and hives. There was not a great show of either.

Mr. V. Leonard, of Springfield, Bradford county, Pa, was there with a model of his National Bee Hive, movable comb, or non-movable, swarming or non-swarming, controlling worm-catching, and self-hiving invention.

Also, J. H. Graves, of Rochester, N. Y., with the Graves' hive. Of him I tried to learn something about the management of bees, and of the moth-miller. He said that "by breeding the moth *under* the hive, it cannot get into the comb; and where the moth gets in the comb, the bees cannot get them out, and they will cocoon in the comb." That "the miller will lay and hatch a thousand eggs in the cocoon, and when hatched the worm destroys the bees." He stated also, that a "queen will not come out to pair but once, and if she does not meet the *male bees* on her flight, she will return and become a *drone laying queen.*" I think this question will bear investigation. I wished him to tell me how the miller or moth paired. He said, "*they did not pair.*" Is this according to reason or observation? Is there not male and female in all forms of creation? And is it not necessary for them to pair, to produce living beings of their own species? Can a queen or a moth produce life or living beings of their own kind, unless mated with the male? I cannot make the contrary of this comport with my reason or knowledge, and desire a more satisfactory explanation. Will beekeepers discuss the question?

The season here has been very unfavorable for bees. J. H. HADSELL.

BREESPORT, N. Y.

[For the American Bee Journal.]

Suggestions and Theories.

RESERVE QUEENS.

MR. EDITOR:—In another article I promised to give you an original plan for keeping reserve queens.

I need not dwell on the many advantages to be secured by keeping on hand at all times a good supply of such queens, as it may be seen at a glance what a nice thing it would be, in all cases of artificial swarming, or in case of finding colonies queenless.

It would also be of still greater use to those who are raising queens for market. But the questions—"Can it be done?" and "How?" are what we want to consider in this article.

Before giving you the plan, I will give you an *idea* to meditate upon, when you have nothing else to do. I originate a great many *plans* and ideas which would perhaps lead to great discoveries (?), if they were only carried out—which is just the thing that I never get time to do! Therefore I propose that we have some responsible and capable person appointed or elected as general Bee-ologist or Apiologist, to work on the principle of the numerous State entomologists, and have him paid (by Uncle Sam, or some State Government, I suppose, as I don't know who else would pay him) a liberal salary; and then just let him experiment upon and carry out the new *ideas* that "we beekeepers" originate! Why, Mr. Editor, I have dozens of them already waiting for a trial! and I presume that there are many others all over the United States in exactly the same fix.

Now what I am going to give in this article is nothing more than one of these very *ideas.* It has never been tried, to my knowledge, and everybody is at liberty to try it as soon as he pleases!

First, then, I will tell you how the idea originated. When a second or a third swarm issues, it is often accompanied by at least two or three, and sometimes half a dozen or more, young queens. These queens, if left in the swarm, will remain there until killed or driven out by one another. The worker bees will not kill them, when they are all hatched in the same hive.

From this I reasoned that if each queen, with a few workers, were put into a separate cage, and these cages all introduced to a queenless colony, they would all be fed or cared for. Thus far I have tried, and it has worked well for a time. But these workers will not live forever shut in those cages. So to remedy this, I devised the following which is my plan.

Take, for instance, a Langstroth frame, say about eighteen inches by ten; or, rather, take one of the frames that you are using, let the shape and size be what it may—I simply give this size for illustration. Cut a piece of wire cloth—an article which every beekeeper should possess—into two strips, each eighteen inches in length by about seven in width. Tack one of these pieces on the middle of one side of the frame—that is, letting the frame extend above and below the wire one and a half inches. Now prepare fifteen slats or sticks, ¼ inch by ⅞ (or the width of the end pieces of the frame); lay these slats edgewise upon the wire cloth, parallel with the end of the frame, one inch apart. If not enough divisions are thus made, each one can be again divided crosswise in the center, thereby doubling the number. Now tack your other piece of wire cloth upon this side of the frame, and you will have a frame full of queen cages. Each opening is to have a separate stopper, and your queen-keeper is ready for use.

When you get a lot of surplus queens on hand, put one queen and about a dozen workers into each cage. Now divide a hive, which this frame is supposed to fit, into two parts, by inserting a division board in such a manner that the smaller division be just large enough to contain three similar frames. Two of these frames are to contain honey and sealed brood, and are to be placed one on each side of your cage frame, and a goodly number of bees supplied.

The larger division of this hive is to contain a swarm of bees with a fertile queen. Then as often as the combs of the smaller division get empty, they should be exchanged with the larger for combs containing sealed brood. Or *perhaps* after these queens had been shut in company with these bees for a week or so, one of them might be liberated to supply the division with eggs. Why not? What are they going to do about it? The bees loose in this hive will feed the bees confined in the cages, and they will feed their respective queens! Of course the bees in each cage should be changed occasionally, as they might die! Or, what would be still better, make an opening to each of these cages five thirty seconds of an inch high, as spoken of by Mr. Langstroth and others, to prevent swarming ("Hive and Honey Bee," page 174, third edition.) This will allow the workers to go out and in the cages, but confine the queens.

I will again repeat that this is all *theory*, I not yet having had a chance to put it into practice. I would therefore not advise any one to practice it on a large scale with valuable queens at first.

If, after trying it, it does not work satisfactorily, just take your queens, *cut off their stings*, put them all together in a queenless colony, and fit on your queen guage. Then if they do not want to dwell together in sisterly love, *let them do the other thing!*

FACTORYVILLE, PA., Sept. 10, 1869.
I. F. TILLINGHAST.

☞ This matter of providing and preserving reserve queens has engaged the earnest attention of apiarians ever since the introduction of movable comb hives. Dzierzon early perceived its importance, and devised various modes of effecting it; and numerous expedients and experiments have been suggested or tried by others also. But nothing altogether satisfactory, and embracing the whole design, has yet been accomplished; and the proposition of our correspondent, we suspect, will be found to go no further than just to reach the real difficulty.

Queens, in any number may be readily raised; but it is not quite so easy to have them advanced to a serviceable condition, and preserve them thenceforward so as to be at any time available. Bees have comparatively little regard for, and not much attachment to, virgin or unfertilized queens; and if such are caged and confined among them, even in a populous colony from which its queen has been removed, they will in most cases be gradually neglected and soon die of starvation—though possibly one among them may find favor and be nursed as the pet of the community. We have quite recently known repeated instances where such queens were allowed to perish, though the workers to whose nursing they were consigned had plentiful stores in comfortable quarters. Hence we judge that the proposed queen-frame will prove to be of small service, if it be intended that young queens, still unfertilized, shall be kept therein even temporarily. Again, if the purpose be to confine and preserve queens already fertilized, other and more convenient modes of accomplishing that may be and are now employed; and we have ourselves been using a *block cage* somewhat similar. Such queens, individually caged and placed among the bees in a queenless colony, will always be fed and well guarded by the workers—each speedily attracting her own special corps of adherents. Nor need the bees have access to the queens within their cages: intercommunion with their antennæ and probosces being all sufficient. We have kept them thus for months, five or six in one colony, suspended in their cages, in a row, between two frames—taking care the while to keep the colony well supplied with honey and maturing brood. But if one queen is left at large in such a hive or nucleus, or is subsequently released, those in cages will sooner or later be neglected and finally abandoned, or the bees and free queen swarm out.

There is then no difficulty, more than ordinary, in raising queens, having them fertilized, and preserving them during the summer, so as to be always at command when required for supplying artificial swarms or queenless colonies. What is needed is some convenient and safe mode of wintering such reserve queens, *in numbers*, each caged separately, and the whole placed in one hive, so as to have them in readiness in the ensuing spring for the exigencies of the season. With extra care and trouble single queens have been and are wintered in small nucleus boxes. But that is too slow a process for these days of railroad rapidity and telegraphic speed. What is needed is some simple and efficient mode of doing it with a dozen or more, "at one operation," and with no greater trouble than is now incurred with one.—ED.

[For the American Bee Journal.]

Notes from Central New York.

The honey harvest for 1869 has been, in this vicinity, a complete failure, owing to the cold and wet weather of the whole honey season from April to August. Nineteen colonies have given me only three swarms and less than thirty pounds of surplus honey.

Italian colonies have shown a very decided superiority over the black bees, during this poor season. They alone made any surplus honey, while the black colonies had, up to September 1st, but little more than enough to support the brood from day to day—some of them showing not three pounds of honey in the whole hive.

Brood has been abundant in all my hives, throughout the season; still the colonies have not seemed to increase in numbers, as they usually do in good seasons. More dead bees have been seen lying around on the ground near the hives and on the neighboring walks, than are usually noticed—not dead from disease, but apparently worn out with unavailing labor. I must confess to great disappointment, as I had confidently expected, judging from past experience, to take off from these nineteen stands, at least twelve hundred pounds of box honey. However, I hope for better success next year.

September 13, I had the pleasure of visiting the apiary of Mr. Langstroth, at Oxford, Ohio, where I saw quite a number of his splendid Italian queens—three of which I brought away and have successfully introduced into my own apiary. Mr. L. also opened one stock of Egyptian bees, without smoke or gloves, in my presence; and I must say that the little beauties behaved remarkably well, notwithstanding the bad reputation they have gained in Europe. To be sure they seemed to stand on tiptoe a little, with wings slightly expanded, ready to resent any insult, but not one offered to sting. The workers and queens are handsomer than the finest Italians I ever saw. I took home one Egyptian queen, just to try her.

While examining stocks that day, we found two instances of two queens in one hive. In the first case we found the old queen with clipped wing, apparently in perfect order, with eggs in the comb she was upon; and on the next comb a young queen, certainly fertile and apparently laying. In the second case, we found two young queens, both fertile, not yet laying, but apparently on the point of beginning to lay. These were in a hive that had been used for raising queen cells, and from which it was supposed all but one had been removed.

I have just received from the bookbinder the first four volumes of the AMERICAN BEE JOURNAL, bound in two nice volumes. I value them very highly, and would not part with them for several times their cost. Can you, Mr. Editor, furnish another full set of the back numbers for a friend of mine, who has been a subscriber for a few months only?

Please accept the enclosed photograph of the subscriber, and the stereoscope view of his little apiary in which he finds so much pleasure.

Yours truly,
R. BICKFORD.
SENECA FALLS, N. Y., Sept. 21, 1869.

[For the American Bee Journal.]

The Rectangular Movable Frame hung angling.

MR. EDITOR:—I invented and made hives, nine years ago, similar to Mr. J. M. Price's hive, as described in the BEE JOURNAL, vol. 4, page 87. I made the rectangular frames, and hung them in the hives, precisely as Mr. A. V. Conklin describes the making and hanging the Diamond Movable Frame, in his patented hive, as stated in the BEE JOURNAL, vol. 4, page 186 I made the hive and frames, and hung the frames as he describes, with the intention of getting it patented. After using them five years, tinkering and altering the frames in various ways, to force or induce the bees to make their combs straight in them, I abandoned the use of them, and the idea of getting the hive and frames or the mode of hanging patented; for the reason that that mode of hanging the frames is the best to get crooked combs of any that I ever tried or ever saw tried. I sold out the hives and bees to beekeepers of the old school, in the township of Hudson, Summit county, Ohio, where they can be seen by any one who chooses, with the combs made in the frames so crooked that it is impossible to remove them, without cutting them literally to pieces.

Now, Mr. Editor, I will try to explain to you and the readers of the JOURNAL, the rule that my bees followed in making combs in rectangular frames hung angling to the plane of the horizon. My frames were made of triangular bars, as represented by Mr. Conklin. The bees would, as a rule, start two combs in each frame; one on the sharp under angle of each of the two upper inclined top bars of the same frame. These combs would be made by two sets of workers, and when worked near to each other one set would be curved to the right and the other to the left, and be fastened to the next frame adjoining. If perchance they started the comb on only one upper bar of the same frame, they would as often curve the comb and fasten it to the opposite upper bar of the adjoining frame, as to the opposite upper bar of the same frame.

After learning this to be their rule for making combs in these frames, I tried to stop it by making a saw-cut down into the apex angle of the frame, and slip a piece of veneering into the cut, so as to have the lower edge of the veneer straight for two or three inches long and parallel to the plane of the horizon. I thought that by this device I could induce them to commence only one comb in each frame, and that one on the lower edge of the veneer; and from thence to follow down the two inclined upper bars of the same frame. Occasionally they would do so; but it was the exception, and not the rule.

Mr. Conklin says, on the same page of the JOURNAL, that the bees, in building comb, will follow down the angle of the frames, commencing at the upper part or angle, and the combs will be built straight in the frames every time: no exceptions. I say to Mr. Conklin (not doubting your statement) that if you have bees that know their duty to their owner and will do it so well, or if it is by some peculiar training of yours, that you are enabled to get such straight combs built in the frame every time, I would like to purchase some of your kind of bees, or get the secret of training them, so as to obtain the same results. I would pay bountifully for it, but nothing for your patent; for I claim that I invented, made, and used movable frames hung as you described yours, long before the date of your patent. M. MILLER.
PENINSULA, OHIO.

[For the American Bee Journal.]

Five Questions.

MR. EDITOR:—Will some one please answer the following questions through the BEE JOURNAL?

In counting the "three yellow bands" on the full-blooded Italian bees, is the narrow strip next to the thorax included, or should they have three *besides* that?

What should be done with a good colony containing fertile workers? Could an unimpregnated queen, or a fertilized one, be introduced successfully?

Will bees with fertile workers build drone or worker comb?

What is the greatest age at which a queen can be or is likely to be fertilized?

And what is the average number of times a good bee-keeper will "go into" (open the hives and examine) his bees, in the course of the season?

J. W. G.
CHILLICOTHE, Mo., July 25, 1869.

Careful experiments have shown that pure air is necessary not only for the respiration of mature bees, but for hatching the eggs, and developing the larvæ.

[For the American Bee Journal.]

To Novice, on Wintering Bees.

Novice, in the October number of the Bee Journal, expresses a vehement desire to get his bees through the coming winter. I have no experience in his latitude, and but little in this—and that only with bees on their summer stands. But that little has been completely successful the last few winters, or ever since I tried my plan. The very fact of my bees all getting safely through the last winter, with a few others belonging to my neighbors, that were put up on my plan, while almost all others left to themselves died, speaks in the highest terms of the efficiency of the method adopted by me.

I do not like the plan Novice contemplates, of putting up forty stands in two rows four feet wide and five high, as too many bees will get lost, in mild days, by missing their hive. I request him to try at least ten or twelve stands as I will suggest. If he fails, then condemn my plan; but if successful, then adopt it hereafter.

Move gradually the twelve stands until they are in a straight row, one foot apart, fronting south—others say north, but I prefer south. Then drive down stakes and board up planks as high as the top of the hives, at the ends and back of the hives. Take off the caps and honey-boards. Spread one or two folds of any sort of dry and clean woolen cloth directly over the frames; or any old woolen rags will answer, if clean. Then stuff the caps with hay, straw, or wood shavings, and put them on, leaving off the honey-boards. Next stuff clean, dry straw between each hive, at the ends and rear, about as high as the hives, only leaving the fronts open. The straw between the hives should project out about six inches in front, so as to break the force of the wind. Also, at the west end there should be plank set up four or five feet high and long, as a protection against fierce winds. Cover the whole with boards, so as to exclude dampness. In cold spells contract the entrance to half an inch. Be careful, also, to fix the front entrance so that snow cannot block it up. All this should be done against November 15. I do mine sooner.

Though my hives generally set in rows, from three to four feet apart, I have but little trouble in moving them together, and back again in the spring. I have already commenced moving mine together; and on examining them to-day, October 6, I find them all in trim for winter, except one stand, a late thin swarm in a box hive, which will require a little feeding.

We had a very dry spell of six or seven weeks continuance, in the latter part of July and in August, which destroyed all bloom and burnt up the grass, but seasonable rains in the last of August and first of September, brought on a fresh supply of bloom on the smartweed and several others; for it is a fact that the bees were hard at work two weeks in September, and filled their hives with brood, but gave us no swarms, nor any surplus box honey. During this time I raised some very beautiful Italian queens, from one which I had just received from Aaron Benedict, but which I was unfortunate enough to lose by a careless accident. The nucleus I had put her in, sat on top of another hive, and while removing a small frame with eggs and brood to rear queens, I dropped the frame, spilling all the bees in front of the hive below. I looked to see whether the queen was among them, in order to put her back, but not finding her, concluded she was not on that frame. But, to my great regret, the next time I opened the nucleus the queen was evidently gone, as there were five or six queen cells started. From these I raised five fine queens, and have already introduced them safely.

Lowell, Ky. R. M. Argo.

[For the American Bee Journal.]

On Last Season, and Wintering.

Mr. Editor:—I reside twelve miles east of Novice. He, in company with another bee-keeping friend, visited me last week. His bees have done exceedingly well during the season just past (producing forty-eight from eleven stocks and ten queens, as I think he told me, and heavy at that), comparing his Italian bees with the black bees in this or his own vicinity.

I have tried this summer to build up artificial swarms, giving them four sheets of full combs of honey, young bees, and eggs, from other hives, removing a strong stock, and setting the new one in its place. With all that advantage they came very near being a failure. The Italians must be a superior bee, or they must have had great advantage in location.

About three hundred stocks are kept in our township, which is five miles square. Box honey, by wholesale, sells at thirty-four cents per pound in our market. A few boxes are filled, others are half full, but the majority have nothing in them. We had white clover in abundance, but the bees have not gathered much from it; they gathered more from red clover. We had no basswood honey this year, and there was very little buckwheat sown. Natural swarming, with only few exceptions, and only about one half of the old stocks swarmed. The old stocks are in fair condition, while the young in general are poor for wintering. The fore part of the season was cold and wet, with meagre secretions of honey; the latter part rather better. The bee moths worked like Wall street bulls. The bees were slow in killing off their drones. My bees were in prime condition last spring, but did not realize half as much cap honey as last year. I have used and seen used a great many different kinds of hives. The Langstroth ten inch deep hive I prefer to all others, when you winter in a repository rightly constructed; but for out-door wintering from ten to fifteen inches deep is better.

During the last ten winters I have kept the principal part of my bees in a house, with the best results. House eleven by twelve feet, and six feet six inches between floors. Walls ten inches, filled in with sawdust, and clapboards outside and sealed inside. Double door in one end; window in the other; shutter inside, and in winter the space between window and shutter filled with hay or straw. Upper floor and lower; in winter covered with sawdust. Ventilator in lower floor, with a six inch stove pipe through middle of upper floor, extending up near the roof, with elbow on top to keep out light—making considerable draft; and when door and window are closed, the repository is as dark as a dungeon. If colonies are strong with bees and honey, or only moderately so with a fertile queen, and well ventilated, I would not be afraid to warrant them to come out all strong in the spring, having no disease whatever. I often throw open the door at evening, closing it in the morning. Keep bees in a dry, even temperature, say from 35° to 42°, and you will not have a suffocated, smeared, stinking mass of dead in the spring. Bees, like man, want God's pure fresh air. We must remember that the larger the number, the greater the heat. Build large, ventilate. Read Gallup on wintering. He is very near right on that, according to my experience. I have had two stocks, one twenty-two and the other twenty-three years old, in well made and painted hives. They always had plenty of ventilation: stood at the west end of a house, without protection, except loose boards laid on top. They always did well, till one of them died, and the other was transferred. Cold does not kill old strong stocks of bees in our climate, if they have plenty of honey over them. Best wishes for the American Bee Journal and its readers.

Thomas Pierson.

Ghent, Ohio, October 2, 2869.

[For the American Bee Journal.]

Loss in Wintering, and the Bee Cholera.

I propose to speak in general of the reasons for the loss of almost every stock of bees that dies in winter; and in so doing I think I can unearth an idea or two, that have never been in print before—at least I have never seen them so myself.

On page 149 and 150 of the Bee Journal, vol. 4, Mr. Truesdell, of Warwick, Canada, says—"On looking for the cause, I found this hive, which was a well made one, closely sealed above, and the melted frost had run down and frozen over the front entrance until it was entirely closed. So, evidently in a changing temperature, their own breath had been the means of sealing them up to destruction. *My* bees need ventilation."

He should have said—"My bees, in winter, need upward ventilation."

The custom of many beekeepers is to stop up, with mud or some other material, every crevice about the top of a hive (I speak of common gum and box hives), at the approach of cold weather, for the purpose of protecting bees against intense cold. This is a sad mistake in practical beekeeping. Better far be opening up small crevices about the upper part of the hive, for the escape of dampness caused by the breath of the bees in winter; and as soon as the bees begin to fly in the spring, stop up every crevice or space, however small, through which heat could make its escape from the hive, in its natural upward tendency. The first thought of the inexperienced is directly the reverse of this; and really, without experience, it does seem that, in order to keep bees warm in winter, the hive should be perfectly air-tight at top; and to give them ventilation in warm weather, it should have open spaces about the top, to permit the air to pass through the hive. But the difference is in this, that the bees will themselves, in warm weather, ventilate the hive below, at the place of ingress and egress; which they are unable to do in cold weather. Except in comparatively only a small number of cases, where the colonies are strong and vigorous, the trouble is not in the temperature of the interior of the hive, in cold weather, unless perhaps it now and then thaws and the water drops down among the bees and makes them damp. In such case, if there is a sudden change again to intense cold, they sometimes freeze in consequence of the dampness. Sometimes too it occurs that the entrance is closed by ice formed from condensed vapor running down, freezing there, closing the entrance, and causing the death of the bees by suffocation. But in my experience I have lost more bees from the two other causes, than from all the rest combined.

There is a principle in nature, in regard to the breathing of air, that when we have breathed all the air in a given space (for instance an air-tight room) its life-sustaining power, which we understand is the "oxygen" is consumed. Then nothing that breathes can live inside of this space. It is somewhat on the principle of a man going into a well, where what is called choke-damp exists. Men who have been in such places and escaped with life, invariably testify that there is not the slightest pain felt, but a sensation of pleasant weakness and a disposition to fall asleep. The writer once knew three young ladies to place some live coals in a sugar kettle and carry it to their bed-room (from want of a stove) for the purpose of warming their room, which was not ventilated. They went to bed, leaving the live coals smoldering in the kettle. Some time in the night they all died, without even the appearance of a struggle. This same separation of the life-sustaining part of the air—the oxygen—by the use of burning charcoal in a room without ventilation, had taken place; or if the room had been very small and air-tight, they would have died in the same manner, when they had breathed out all the oxygen.

Before we define our position thoroughly, we will admit that there is a tendency in the law of nature to an equalization of temperature, and to purify the air by its own effort to produce commotion. But there seems to be in some cases, perhaps only apparently, an inability to perform this function, resulting in inaction or stagnation. A failure to produce this equalization of temperature in a hive, and supply the bees with pure air, leaves them to go to sleep in death. This generally occurs in hives that have plenty of honey and bees. In fact, in almost all cases where you find a large number of bees in a hive after they are dead, their death was caused in this way, especially if the hive have a great quantity of honey in the combs. The more honey there is left, the more certain you may be that their destruction was brought about in this way. The oxygen of the air being exhausted by an excessive number of bees crowded into such a small cubic measurement of air, in thin layers between the combs filled with honey, or having comparatively few empty cells. The remedy is upward ventilation. Of course you do not want a brisk current of air passing through the hives, when wintered on their summer stands.

There is still another reason why a great many bees die in winter. I have been traveling through southern Illinois and Indiana, where the *Bee Cholera Epidemic* is said to have raged last fall, and propose to give you my version of it. I am aware that others will differ from me, but think that time will demonstrate the correctness of my position.

The first appearance of the many hives I examined (and which amounted to almost hundreds), was that the hives were without exception filled with honey to the very bottom, or showed signs that the honey cells, where any large number seemed to be open, had been torn open by robber bees. Robbing bees, in their great haste to obtain honey, leave the outer edges of the cells they open very rough and ragged. An expert can easily tell how the honey was extracted from any piece of comb.

I also learned on inquiry that the bees had annoyed every grocery store that contained even sorghum molasses, and in their anxiety, impelled perhaps by the pangs of hunger, had, in the fore part of the summer, gone into the kitchen and pantries in which there were sweets of any kind. This state of affairs existed for somewhat more than a month. Of course the bees, where such hunger existed, could not rear any brood worth mentioning.

The reader will here call to memory the fact that ninety days is, in the working season, the lifetime of the worker bee. He will also remember that for thirty days, up to this period, no young brood was reared. I also learned that such a honey-dew, as occurred then, was never known in those parts before. One man even affirmed that, in driving up his cows in the morning, his clothing became (to use his own words) quite *stickey*. Others told me such unreasonable stories, that I am unwilling to communicate them. I found that this condition of matters existed in that locality for over a month. Ten days being sufficient for a good stock of bees to fill its combs, where surplus honey exists in such enormous quantity, the bees immediately filled their hives so full that no empty cells remained for the queen to deposit eggs in. The change from intense want to excessive surplus being so sudden, the queen did not have time to supply the cells with eggs before they were filled with honey; and they remained so for perhaps sixty days or longer. Now add the thirty days that the colony could not rear any brood previously from the absence of honey in the flowers, to the sixty days that the combs were so full of honey that the queen had no room to deposit eggs, and you have ninety days, the natural lifetime of the worker bee in the working season. Some men said the bees all left; others that they all *swarmed* out. But when I asked them whether they had seen them swarming out preparatory to leaving, the invariable answer was, No! When I asked whether any of the family had *seen* them swarm out and leave, the answer was the same—though they would insist on it that the bees must have done so, as they were all gone. The manner of their disappearing is evidence that the expiration of the term of the natural life of the bee passed them off the stage of life, slowly and gradually till all were gone. In a great many cases a small number of bees remained up to the first cold frosty night; and in some instances, a larger number remained till near mid-winter, and then died. Some owners saw their bees crawling out of the hive on warm days late in the fall, drop down to the ground, and die. In not one instance in a great number was any large quantity of dead bees found in the hive. So much for the *Bee Cholera*.

The same principle holds good, if the bees fill their combs so full that there is no room for the queen to deposit eggs, for thirty days. Then your hive, so far as numbers are concerned, is one-third gone to destruction; and if the cells are so filled for sixty days, that the queen has no room to deposite eggs, then your hive is two-thirds gone to destruction, and will perish soon after, if left unaided.

The second cause, then, of bees dying in winter, is because the cells were kept so filled with honey or pollen for say sixty days, that your colonies go into winter quarters with only from one-third to two-thirds of a usual sized swarm in a hive. The bees, in consequence of their diminished numbers, not being able to withstand the rigorous cold, freeze to death, leaving the hive filled with honey. Sometimes it occurs that a colony loses its queen in summer, and by the time the cold weather approaches the bees are few in number and perish in the same way; or they may not hold out till winter, the moth destroying them previously.

The remedy in all such cases, is the means adapted to intelligence, ability, and will. In the first two cases, the surplus honey must be taken out of the way of the bees, without if possible producing a vacuum above them. Boxes on the top of a hive are an intolerable nuisance, for three reasons: first, because of the production of a vacuum; secondly, because of the loss of time in getting the bees to work readily in them; and thirdly, because of *the loss of comb*. Now, my beekeeping friends, do not let me astonish you, but I mean what I say that such boxes are an intolerable nuisance. Our system of management has to undergo the ordeal of rigid critical investigation. Bees will produce more than double the amount of surplus honey, if it be taken from the main hive, and the empty combs returned below instead of above, for the double purpose of saving the comb and furnishing empty cells below, precisely where the instinct of the queen teaches her that the eggs should be deposited. As the brood that has been elevated hatches, the empty cells in the upper part of the hive are filled with honey by the bees, according to their instincts, and the combs may then be revolved. The mere art of emptying a comb and returning the same, and allowing it to occupy the same position it did before emptying, does the queen no good service for the purpose of depositing eggs, for the reason that the comb emptied where the frames are not combined one above the other, only furnishes room for storing honey. We must have means by which we can keep the colonies strong, by furnishing empty cells below the brood. J. W. Seay.

Monroe, Iowa.

[For the American Bee Journal.]

Wintering Bees.

Mr. Editor:—I this morning got down my ink and paper, thinking to write a short article for the Journal, on wintering bees. I also took down a bundle of Bee Journals, and I declare I got so much interested in looking over them, that I almost forgot to write. It does seem to me that the Bee Journal is becoming more and more interesting all the time. But this is not coming to the point. What I want to write about is, how I have wintered my bees. I have tried various ways, but my best success was by placing them in my cellar. We frequently hear some of our friends complain through the Journal, that their bees did not do well in the cellar; but I must say that mine have always exceeded my expectations.

Last winter I put a partition in my cellar, which made a place about fifteen feet square on the ground and about six feet deep. In this I placed some seventy stocks, most of which wintered finely, though they became very uneasy in the latter part of February, on account of a warm sultry spell of weather. I opened the windows and door at night, which at first only seemed to make them more uneasy; but after the door was kept open for some time, they became more quiet. After two or three days of warm weather, it got cold again till some time in March, when it became so warm once more that I was obliged to take them out in a drizzling rain. The bees flew rapidly though it was raining, and I think a considerable number were lost. Nevertheless I think I never saw stronger stocks than most of mine were last spring, commencing to swarm by the middle of May. I would remark here that I discovered, on placing my bees on their stands, that they remembered their old locations, for whenever we misplaced a hive the bees immediately flew to their former locations.

As to the manner of placing the hives in the cellar. I use the Langstroth hive, and mostly take off all the surplus boxes, leaving part of the holes in the honey board uncovered; but last winter most of them remained on the hives. I may say here that I think a set of empty boxes, not sealed up tight would give all the ventilation necessary. As a general thing, I consider it more important to have the cellar well ventilated, than giving too much to the hive. I carried quite a bed of straw in the cellar, to absorb the moisture, in addition to having my cellar well ventilated. Well, says some one, how do you manage to ventilate your cellar? I ventilate mine by a seven inch stovepipe running from the cellar up to the flue at the roof of the house; and, by the way, I think it wrong, in this age of improvement, that a good house should be built without ventilating the cellar properly; as I deem it very important both to the health of the family and that of the bees. It matters not how you ventilate; that is, whether it is by a stone, brick, or wooden flue. A ventilator might be made of inch lumber that would answer very well, though you could in that case not use any fire. In my cellar I built up a small furnace with brick and set my stovepipe on it. Thus I can put fire in, if I wish, and expel some of the dampness out of the cellar.

As for placing my hives so as to be able to see such stock of bees as Mr. Gallup suggests, at any time in the winter, I have not room enough for that. I piled the hives on top of each other till I had my small apartment as full as I could stow it, leaving only one passage way to the door. With my cellar ventilated and my bees placed in it in this manner, they are comfortable. By removing the caps of the hives I might stow in more stocks; but I fear they would not be so healthy. If the necessary ventilation is given to both cellar and bees, I think you can safely pack your cellar as full as it will hold. I prefer to set them up a little way from the ground; though if the cellar is very dry and you litter it well with straw you may set them on that without risk of damage. I also have an outside cellar door, which is serviceable when carrying your hives in or out. The doorway of this is also packed full of straw. Now, when my cellar is thus packed full there is no chance to see in what condition the bees are, except perhaps some of those in the outer tiers. I have had my bees in the cellar four months at a stretch, and they did well.

Let me now also suggest an idea about wintering bees on their summer stands; and that is simply by placing the hives in a box large enough to enclose the whole hive and leave space all around. A common dry goods would answer; and I am satisfied it would pay expenses. I have two stocks or swarms that I placed in such boxes this summer, and think it will be just the place for them in winter. But, inquires some one, how do the bees get into your hive, if you enclose it in a box? You must of course make an entrance corresponding with the entrance of the hive, Then we can pack straw or any warm material around the hive, and make the bees as comfortable as may be desirable. I tried these two swarms as an experiment, and I think it has worked well; the one being a prime swarm, and the other a second swarm—and weak at that, yet it has properly filled its hive and is very heavy. The prime swarm has also done well, filling the hive and most of the surplus boxes, and building a small comb outside, though we have had the poorest kind of season here for bees, it being wet most of the time. S. May.

Eddyville, Iowa, September 14, 1869.

[For the American Bee Journal.]

Novice.

DEAR BEE JOURNAL:—A few months ago we mentioned, in one of our articles, that one of the subscribers to the JOURNAL came quite a distance to see how artificial swarms are made, and when asked if he did not understand the plans given in the JOURNAL, replied that he had not had time to read them. (We feel secure in saying all this about him, as he wont have time to read it.) Well we did not think at the time that anybody would ever say that had *we* read the JOURNAL as carefully as we should, we would not have asked the question in regard to wintering that we did in the last number. But such we really believe is the case, and we hereby notify all correspondents that we don't want to be told of it, as we know it now already!

The fact "leaked" into our head in this wise. The next Sunday (if it is wrong to read the BEE JOURNAL on Sunday, we really can't help it), we gathered all our JOURNALS from No. 1, vol. 1, up, and prepared ourselves to collect and classify all that was said on the subject of wintering. (Do you know, Mr. Editor, what a *pile* of valuable experience those same JOURNALS furnish on that subject?) Before we could get our materials in order, we began to wish that our JOURNALS were bound; but as we wanted them "right off then," we, after placing each volume in proper order, pushed some large pins through the top, bottom and middle of the margin of each one, and, after clinching over the point, found we had a very fair book for *our own use*, (they might not do to *lend*).

The index we find very convenient, and long before we got to Mr. Gallup's excellent article on page 129, January number, we understood that it was quite as desirable, or more so, to keep the warm rain away from the hives, as to keep the cold out; and in the article just mentioned Mr. Gallup finishes the subject, at least to our notion.

So we too are going to build a house for our forty-seven (we have concluded that we would rather have forty-seven than forty-eight) swarms; and as we may be so unfortunate as to have a hundred some time, we are going to make it large enough for that number.

Mr. A. C. Atwood, on page 78 of the present volume, describes almost exactly what we have determined on.

The pile of boards, debris, &c., which Mr. Gallup mentions when attempts are made to fix up such structures cheaply, has made us feel that we must have a nice house, where we can take our friends. We are going to have the boards planed and painted, and some kind of neat cornice; and would like some one to suggest an appropriate emblem to top it off with. We want a large window and a large double door, so that our "help" wont bump the hives against the door-posts, as such a catastrophe might be harassing to our feelings. And we want it clean and nice enough inside, so that we can persuade our "better half" to come in and "take a turn" at our melextractor in the summer time. Ten inch sawdust walls will make a nice cool place in hot weather.

We find a statement in the JOURNAL, that a house large enough for one hundred stocks, will not cost over forty dollars. Why, Mr. Editor, our carpenter thinks it will cost about two hundred dollars; but as the bees we lost last winter were worth more than that, we say let it cost.

We have been to pay a visit to a friend in an adjoining county, who built a house we think fourteen years ago; and he says he never lost a bee in it while they had honey left. If our house will serve to do that, we shall be well satisfied. Our whole forty-seven stocks have got nice queens, and we are sure we can give them honey enough, and then stand out of the way.

Now after all that has been said on the subject, we should like to ask the following questions. Mr. Gallup's opinion would be quite a favor.

How can the most honey be realized, say with the melextractor, in a season? By absolutely preventing swarming? By an increase of one half, by early artificial swarming? Or, by doubling the whole number of strong stocks, as mentioned?

Mr. Jasper Hazen's figures on the subject we cannot admit, as we must think, even if it seem harsh, that he grossly if not wilfully misrepresents the matter, more with an idea of getting people to inquire about his hive, than of communicating one real fact.

Our experience would be that a proper increase of stocks, made early in the season, in a locality not overstocked, would give more honey, than an absolute prevention of swarming.

We forgot to add that we intend in the spring, as soon as our bees are removed from their house, to fix in it a suitable stove and make some further experiments on artificial incubation. Such a room once warmed up, we think, would keep warm a long time.

Now, friend Argo, don't let your fifty-two stocks play out wintering, or we shall get that queen yet!

Hurrah, for the winter! Our naturally hopeful disposition begins again to reassert itself. Will our friends on the subject at least give us their sympathies, and in return receive those of

NOVICE.

A large fruit grower says that his cherries are a very uncertain crop, a cold northwest storm frequently prevailing when they are in blossom. He had noticed, that if the sun shone only a couple of hours, the bees secured him a crop.

In winter, if bees are kept in a dark place, which is neither too warm nor too cold, they are almost dormant, and require very little air; but even under such circumstances, they cannot live entirely without it.

A sweaty horse is detested by bees, and if assailed by them is apt to be killed—being in such case, a very helpless animal.

THE AMERICAN BEE JOURNAL.

WASHINGTON, NOVEMBER, 1869.

The Foulbrood Question.

On another page will be found a full account of the proceedings of the Committee appointed by the Salzgitter Beekeepers' Union, in Brunswick, to test Mr. Lambrecht's ability to cause and cure foulbrood in a colony of bees. The result, according to the statement of the Committee, shows that Mr. L. really performed what he professed himself able to do; and that this formidable disease is now at length brought within the control of medical or rather chemical science.

But, doubts have been expressed in distinguished quarters, whether the test instituted was in reality a fair one. The disease, produced in the colony under consideration, and again cured by Mr. Lambrecht, it is now alleged was an *artificial* one, which may indeed have resembled foulbrood in some of its more prominent manifestations, without being in fact the genuine malady, such as originates in or from natural causes. Hence it is inferred and suggested that the cure was simply empirical, and is at most adapted only to cases like that in hand. Conceding that this may be so, the fact that it is so still remains to be demonstrated; and if that were done, it would not be an occurrence very marvellous in medical science, where theory and practice are so perpetually fluctuating, that what is lauded to-day as a panacea, may to-morrow be denounced as mere worthless charlatanry. 'Tis even so. Goethe says—

> "Der Geist der Medicin ist leicht zu fassen :—
> Ihr durchstudirt die grosz' und kleine Welt
> Um es am Ende gehn zulassen,
> Wies Gott gefallt !"

Of course, under such circumstances, we would not undertake to contend, as against high authorities, that Mr. Lambrecht's processes are all and can effect all that he claims, or that may be desired. Yet he appears, in this instance, to have done, what no one has ever done before on any scientific principles whatever. He has *cured* that which experienced and intelligent apiarians—experts—pronounced to be foulbrood, even though it was artificially produced. So far so good. Now, to meet the objections, let him take in hand an ascertained case of foulbrood undoubtedly originating from *natural* causes (and many such can readily be found); and if, in addition to what he has already accomplished, he effects a radical cure in such a case, we may certainly regard him as *quoad hoc* a doctor, though he have no diploma! He is an educated *chemist*, professes to regard the disease as subject to *chemical laws*, claims that he compounds his remedies on *chemical principles*, and applies them in accordance with *chemical theories;* and if he *cures* the patient, he may certainly be supposed to do it rigidly *secundum artem!* If he now, to make the matter clear to the comprehension of ordinary minds, proceeds and shows that he can cure foulbrood of every kind or description—contagious or non-contagious; mild or malignant; accidental, incidental, artificial or natural—*that fact* is about all the *beekeepers* will care to know. So long as doubts may be fairly or even plausibly urged against his methods or pretensions, it behooves him to meet and dissipate them; but mere captious fault-finding, it cannot be expected that he, or any one for him, will ever heed.

The differences between Dr. Preuss and Mr. Lambrecht do not strike us as being so great as to be irreconcilable. Nor does it matter much whether foulbrood is of fungoid origin, or finds its source in putrefactive fermentation, *provided* we are put in possession of efficient means to arrest and cure it. *That* is here "the one thing needful." On the theory of Dr. Preuss, however, we cannot see how the disease is ever to be extirpated, when it has once obtained foothold in an apiary or a district. If it is liable to start into existence and action whenever and wherever the fungoid sporules, ever floating in countless myriads in the atmosphere, find a suitable nidus and fostering heat and moisture to aid development, no colony can be always safe from the inroads of this disease, in any locality where bees can be cultivated. This "noisome pestilence" that hitherto has been literally "walking in darkness," may thus be expelled to-day, only to reappear to-morrow with re-invigorated virulence. But such does not, to us, appear to be the mode of its diffusion; and hence we are inclined to infer also that such is not the manner of its origination. Its progress in an apiary, so far as we have observed it or are advised, however it may have originated, can always be traced to direct communication and actual contact; and this accords better, it seems to us, with Mr. Lambrecht's views and theory, than with those of Dr. Preuss. Between the two, however—each an adept in his own province—the whole subject is now fairly up for thorough investigation and the test of practical experiment; and thus it may speedily be determined who is right, and which of them can cure the genuine or naturally produced disease—if either can.

We sent to Professor Porter, of Easton, Pa., the specimens of bee plants enclosed to us by Mr. Gardner, of Christiansburg, Virginia, and Mr. Faul, of Council Bluffs, Iowa, as mentioned in the correspondence of the BEE JOURNAL for this month. That received from the former is the *Aster ericoides L.*, noticed in a former number of the Journal, as an excellent bee plant, flowering in autumn, and abounding almost everywhere, especially along roadsides and in old fields. Those received from the latter are Golden Rods, No. 1 being *Solidago rigida L.*, rather rare in the Eastern States; and No. 2, *Solidago Canadensis L.*, common in all parts of the country.

Professor Porter remarks—"North America is the true home of the golden rods and asters, which are poorly represented in Europe. By reason of their great numbers and profuse blooming, they form a striking and beautiful feature in our autumnal flora. It is interesting, therefore, to know that the bees have found them out, and that they are likely to increase the yield of honey."

We have often heard the golden rods spoken of as superior honey plants, and have examined many varieties of them; but have never been so fortunate as to find bees working on any. We suppose the secretion of honey by them depends much on the kind of soil in which they grow and the character of the season.

"THE HEARTH AND HOME" is one of the best illustrated family newspapers now issued. It is published by Messrs. Pettengall, Bates & Co., in New York, at four dollars per annum for single copies; but three copies are sent for nine dollars, five copies for twelve dollars, and all over five copies at same rate, always in advance. These are strong inducements for clubbing; and those desiring to take a paper of this class cannot fail to be pleased with one so carefully edited and cheap as the HEARTH AND HOME.

We have received a copy of the "*Illustrated Catalogue of Grapes, Small Fruit, &c.*, published by the proprietors of the Bushberg Vineyards and Orchards, at Bushberg, Missouri. Though regarding ourselves as much better qualified to judge of *fruit* in its edible state, than of plants or such publications, we can say of this catalogue that it appears to have been prepared with judgment and care. The condensed treatise on grape culture will be a valuable companion to those who design to devote attention to that subject.

Just as this number goes to press, we receive a copy of the "*Beekeeper's Instruction Book*," by S. B. Replogle, Roaring Spring, Pennsylvania. It contains practical hints for the general management of bees, and is intended for beginners. It is written in simple plain language, and is very brief. Price, 15 cents.

Correspondence of the Bee Journal.

COUNCIL BLUFFS, IOWA, Sept. 19.—Inclosed find two specimens of flowers that grow very thickly on our bottom lands. They have been in bloom for two months, and will continue in bloom until the frost cuts them off. They are the best honey-producing flowers I ever saw in any country. For the last two months my bees came in so heavily loaded that they fell in front of the stands, and sat there several minutes before they started to enter their hives.

My bees have averaged thirty pounds of box honey to the hive, within the last three weeks. I had two swarms of hybrids come out on the 6th of September. They issued at the same time and united. I hived them together, and to-day they have their hive full—ten frames, and are working in two of the surplus honey boxes. If the frost keeps off two weeks longer, they will fill three ten-pound boxes. As soon as these bees stop working this fall, I will weigh them, and an empty hive, and let you know the amount of honey stored by them from the 6th of September until frost comes. Please find out the names of those plants.—H. FAUL.

CHRISTIANSBURG, VA., Sept. 20.—Inclosed I send you a flowering specimen of a weed growing in great quantity in some of our pastures, and also in the woodland, and which proves to be the best honey plant that I am acquainted with—always excepting the white clover. The honey stored from it is of fine flavor and highly perfumed, and as clear as that gathered from white clover.

My bees are now working as strong as in June, and had it not been for the severe drouth which prevailed from the 15th of July to the 10th of this month, they would have stored a good supply of surplus honey; but during the drouth they consumed a large portion of their stores. Now they are gathering honey rapidly; the queens are depositing eggs at a great rate; and the hives will be very populous at the close of the season, mainly with young bees. They will thus be strong and vigorous for next spring's work; and, like NOVICE, I have visions of scores of swarms and lengthy rows of jars filled with honey, in 1870. Give me the botanical name of the enclosed plant in the next JOURNAL.—J. R. GARDNER.

MONMOUTH, ILLS., Sept. 20.—Bees have done finely here this fall. They could not have done better than they did for a month past. About three weeks ago, I took sixty-eight pounds of box honey from a first swarm, which was hived on the 26th of June; and they now have two thirty-pound boxes about full. I had a swarm to come off on the 18th of August, and on examining them a day or two past, I found that they had filled all the frames in the hive. I expected to have to feed them the coming winter.

I read a great deal in the JOURNAL about the working qualities of the Italians. I have some stocks of each, the black and the Italians. For industry I would prefer the hybrids, but would rather not handle them much at this season of the year. To-day I undertook to examine a hive of Italians, but was glad to get away from them without seeing the inside. I thought at the time I should have liked to have had friend Baldridge to try his hand at handling them without a veil or bee-hat. I think it much pleasanter to feel that you have your eyes protected when you hear the angry buzzing of the bees about your ears.—D. M. DUNGAN.

NATCHEZ, MISS., Sept. 20.—I have now forty-two hives, of which about one-half are the Langstroth pattern. I commenced this season with eighteen hives of bees, most of which were in good condition at the opening of spring. Our past winter was, as is usual here, a not very severe one. We had some days in December and January during which some of my bees were able to fly out and gather pollen to a limited extent from a species of wild mustard, in bloom in sheltered places. Plum trees commenced blossoming here on the 27th of January, and were followed on the 11th of February by the peach, and at the end of March by the apple; during which time, for the most part, the weather was favorabe and the bees availed themselves of the opportunity most assiduously.

My bees commenced swarming on the 6th of April, during the height of apple blossoming, as is the case yearly here; and continued swarming until the end of May. The season has been a very favorable one here for honey gathering. About a week ago the weather changed suddenly from hot to cool, and I perceived a decided cessation of gathering immediately afterward; although previously, during the entire summer, sufficient was to be gathered to supply their needs, without drawing upon their stores, while comb building and accumulating of honey in surplus boxes had not been going on since the middle of July.

I have some stocks of hybrid Italians. I am sorry I have not been able to preserve the pure breed thus far; though it is my intention to procure the purest next season to breed from. From my experience with those I have, I can add my testimony to their superiority over the black bees. I procured two queens from another apiary last year, but did not succeed in getting those raised properly mated. In December one of the old queens was found, on a mild day, in front of the hive in a dying condition, from which I was unable to revive her, and the colony raised an imperfect queen which laid only drone eggs, and was broken up in the spring. The other old queen, whose wings were clipped, came out of her hive in February to die. I revived her by warmth and dropped her among the bees at the top of the hive. An hour after, I found a fine young queen on the ground in front, benumbed with cold—revived her and returned her. The old queen then again came out, and I destroyed her. Next day I found a young queen in front, in the same condition, and destroyed her; for, without opening the hive, I come to the conclusion that the old queen had failed from some cause, and the colony had superseded her. It happened fortunately that drones from the first hive spoken of were flying, and I had the satisfaction of seeing this queen return from her wedding excursion on a fine day in March, having without doubt mated with one of her own species, for no black drones had yet made their appearance. She proved to be fertile, but the hive did not swarm until the 20th of May. The swarm was a very large one, and has given me a considerable quantity of surplus honey, besides filling their hive. The bees however are dark and are not at all well marked. I am constrained to believe that the queens originally sent to me were not altogether pure. I have several hives of hybrids showing brighter bees than these. My hybrids have all done better than the black bees. One first swarm of them, hived May 3, (which is late here), threw off a swarm July 8th, and is now as populous as any of the rest; whilst none of my black bees have done the like.—J. R. BLEDSOE.

LAFARGEVILLE, N. Y., Sept. 28.—We have had here the most lamentable honey season within my recollection of nearly twenty years' beekeeping. The weather has been wet and cold. White clover blossoms in profusion. The basswood seems not to blossom every year; this year the trees had scarcely any blossoms. But what of it—the flowers were either deficient in honey-producing faculties, or the frequent rains must have diluted and washed the honey away. Instead of half a ton or a ton and over of surplus honey, as I have been used to harvest every year before, I shall this year hardly have any to speak of. My apiary numbers now one hundred and thirty swarms, fifty-three of which are new swarms. How many of them have gathered honey enough to winter I have not had time to ascertain yet. Peaceable times, however; no fighting or attempts at robbing.

Inclosed please find two dollars for the BEE JOURNAL for 1869–70—which credit as usual. Bidding you success in your devotion of spreading, through your columns, the knowledge as it advances in apiculture, I am respectfully, yours. —J. N. ROTTIERS.

North Leverett, Mass., Sept. 28.—Bees have not done much in this place this season, on account of the cold wet weather, until since the 1st of September. Since then they have done well. There has been quite a honey dew, and they have improved it nicely, and are going into winter quarters in good condition.—G. W. R.

West Groton, N. Y., Oct. 1.—Bees have done poorly here this season. Not one-half of the stocks swarmed; and they have not all collected honey enough for winter, and, if to be wintered, will have to be fed. Beeculture is still in the background here, but I am in hopes it will be advanced by the introduction of the Italian bees and the movable comb hives.—D. H. C.

Carthage, Ind., Oct. 4.—I had thirty-two stands of bees that lived through the last winter, and bought thirteen stands in the spring. I have now one hundred and ten stands, and 1,300 pounds of surplus honey. The increase in bees has been mainly by natural swarming. I use the Langstroth hive, 10½ inches deep, 18 inches long, and 14½ inches wide. My bees are nearly all Italians. I sowed six acres of buckwheat on wheat stubble, during the second and third weeks in July. My bees worked freely on the red clover in the neighborhood, after the harvest. My last swarm came out on the 18th of August; and I had twelve swarms in the previous ten days.—P. W. McFatridge.

Burton, Ohio, Oct. 5.—Our bees have done poorly here; no surplus honey, and rather little for winter stores. There have been only a few swarms in these parts. We had a Bee Convention at the State Fair at Toledo, with good results in feelings, and adjourned to January next. I will see that the notice is sent to you in time for the Bee Journal, as we give a general invitation to beekeepers in all the States, and expect a general turn out.—J. T. Merriman.

Decatur, Ills., Oct. 5.—I embarked in the bee business about three years ago. The summer of 1868 proved very disastrous to the beekeepers here, on account of the "bee malady." Out of fifty-six stocks I saved only four. Most of my neighbors lost nearly all they had; while some living six or eight miles from here, lost only about as many as in other years. But nowhere in this section of country did bees do well that year. This has been a remarkably good year for bees—none better has ever been known here, both for increase and surplus honey. Some of us have picked up courage, and are trying again. While the Northwestern Beekeepers were in session here, we had some interesting discussions, and we hope it will give a new impetus to the business here. We endorsed the Bee Journal, and secured you some new subscribers. May the day hasten when it shall be published semi-monthly.—J. B. R. S.

Somerset, Ohio, Oct. 7.—My bees have done well this season. I had eight stocks to commence with. I now have twenty-one. I got 1,100 pounds of surplus honey. My best hive gave me 250¼ pounds of honey and one swarm; and that swarm gave 106 lbs. 9 ozs.—entire product of hive, 356 lbs. 13 ozs. surplus honey and one swarm of bees. The old stock and the young swarm are both in good condition for wintering. I had a good supply of old combs and use a honey machine.—L. Edwards.

Excelsior, Minn., Oct. 5.—My bees have done indifferently well this season; but I have had strange luck in my attempts to Italianize; having lost $45 worth of queens, without Italianizing a single hive—a couple of cross hybrid stocks being the only trace they have left behind them.

I find the Journal as valuable as ever, and rely almost entirely upon it now for instruction in apiculture. I feel as though I could hardly get along without it.

Flat hives—eight inch frames—have failed with me, on the score of breeding. We require higher frames for this *high* latitude. They should be at least twelve inches deep.—J. W. Murray.

Jefferson, Wis., Oct. 5.—I have all the stocks of my home apiary at home again now. They have gained much more than I expected they would. The whole gain of two hundred and seventy-one colonies was twenty-seven hundred and eighty (2780) pounds—a very good reward for four weeks' labor for two men. As matters look now, I can winter six hundred and fifty (650) colonies, without feeding. I will not undertake to winter more than twenty-five colonies that need feeding.—A. Grimm.

Newton, Iowa, Oct. 8.—Bees have done nobly since the middle of August, filling their hives, storing much surplus honey, and swarming until September 5th. I unexpectedly had a natural swarm on the 1st of September, and with a little assistance they are ready for winter quarters.—C. J. Housel.

Worthington, Pa., Oct. 13.—I am much pleased with the Bee Journal, and have already derived more benefit from it than its cost. —J. W. B.

Lettsville, Iowa, Oct. 14.—We bought a stand of bees last fall for $3.25. It and the increase are worth $35.00, plus 72 lbs. of honey, at 25 cents, $18.00; making $53.00 of $3.25, or 1537 per cent.—D. D. P.

Are Bees Profitable?—This question, so often asked, is answered satisfactorily, we think, by the fact that Dr. John Dillard, of this county, obtained from his stock of Italian bees, as the result of the season's work, *three thousand* (3,000) pounds of excellent marketable honey, and also eighty new and healthy stands of bees. This is an attractive showing, and will induce many of our readers to think more favorably of this branch of domestic industry.—*Louisville* (K. Y.) *Farmers' Journal, September* 30, 1869.

Never blow your breath on your bees. They will sting you directly if you do.—Butler.

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Attempts at Bee-keeping in India.

I am indebted to an unknown friend in the great Asiatic peninsula for a copy of a recent number of the Saturday edition of *The Indian Daily News*, from which I extract the following interesting article.

T. W. WOODBURY,
"A Devonshire Bee-keeper."
MOUNT RADFORD, EXETER, ENGLAND.

AMUSEMENTS OF A NATURALIST—BEES.

Bees that collect honey are found in almost all countries. And wherever Englishmen go to make new homes for themselves, if they find there are none, or none of the right kind to meet their wishes, they soon manage to get some from home. Bees occupy a very important place in creation, and perform very important functions in rendering fruitful the seed-vessels of vegetables and flowers. In New Zealand, it is said that the Clover taken from home and sown there produced beautiful crops of fodder, but no seed, till the English honey bee was imported. In India there is no lack of honey bees. There are three kinds that are especially interesting. The large bee, that constructs its combs on the boughs of trees, makes a comb about the size of the half of an ordinary cart-wheel. The bee is as large as a hornet, and its sting is fully as poisonous. I began amusing myself with this creature, but I thought it necessary to go about forming an acquaintance with it very cautiously. I thought it advisable, first of all, to understand the extent of its ability to produce hurt. I could pretty well judge of the extent of its honey-producing capacities from what I had seen of its comb,—3 inches thick near the bough upon which it was built, and indeed at times thicker if the bough were a thick one, and in the thinnest part where the breeding was carried on, fully $2\frac{1}{2}$ inches in thickness. The upper part, that is to say, about a depth of 4 inches, was occupied with honey; and a full-sized comb would be about 3 feet along the bough, that is to say, comb filled with honey, 3 feet long and from 4 to 5 inches deep. A goodly quantity of sweet-stuff this, to be had for the gathering. The best way of gathering is to get a quantity of rubbish together, put it under the the hive, or more properly the comb, and set fire to it in the evening. Bees cannot bear smoke, and there are most alarming tales told about travellers having made fires under trees in the daytime, without first looking up to see if the smoke might be any annoyance to any one up above. I remember an Arab horse-dealer once acting thus imprudently, and almost before his horses were picketed, the infuriated saurungs—that is the native name—began to sting the horses, and in the course of ten minutes every horse fled from the encampment, tearing like mad horses, at every point of the compass; the syces trying in vain every possible dodge but the right one to escape the infuriated creatures. Two of the horses that could not escape early enough, died from the stings they received, and of the men several were ill for days. I did not know of the certainty of such cases as this, when I sought to make the acquaintance of the saurung honey bee. The object I had in view was to domesticate them; and I knew I could not do so unless I could establish a sort of friendship with them I found a fine large hive near my house, suspended from a large branch on a mangoe tree. My first object was to get hold of one individual bee by itself. I thought it safer to ascertain what could be done with one before I attempted a number. A marble from a goolail* soon brought down about half-a-dozen, and they were rather at my mercy in that state. I quietly proposed to one, that we should make each other's acquaintance; he offered no objection, but when I took hold of his wings he protruded his sting. I said, "Exactly so! what is its value?" and presented the little finger of my left hand in return. In an instant the bee was under my foot, for with a force which I had not counted upon, the sting was thrust home into my finger. Fortunately it pierced the finger sidewise, and the thickness of the skin had saved me from the full effect of the poison; but the burning heat it had engendered in my finger, running right up my arm in an instant, quite satisfied me that I had better let well enough alone, and drop their acquaintance. I had carried an antidote with me, and as soon as I could get the cork out of the bottle, I put a good drop of ammonia well saturated with opium, on the place where the sting was taken out, and that soon gave me relief. I soon afterwards found that the honey collected by this large kind of bee is very coarse and often unwholesome. My readers perhaps will cry, Sour Grapes! Honor bright, however; what I say is correct.

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* Pellet-bow.

The domesticated honey bee was always a great favourite with me at home, and indeed with my father and mother before me. I remember how often I used to get stung by them in our garden, when as a small boy I would disobey orders, and wilfully go to the hive and watch the little creatures, as they came home with their legs laden with little pellets of brown, green, and yellow pollen, which my mother told me was honey, but which I found when I caught one was not sweet at all, and therefore could not be honey—for which experiment I got a caning. I remember also one cold frosty night, as I got into the chimney corner, how all the household was thrown into confusion by some one rushing into the room, saying that there were thieves about, for that they had heard the rustling of their steps in the stubble field and behind the house. There was at once a careful listening by all who were bold enough to venture out of doors; but all was quiet, not a footstep nor the least rustling was to be heard even in the stubble field. My father, however, thought he would make sure by walking round the grounds, and as he went into the garden, he thought in the starlight things did not look all serene about the bee-stall; and sure enough when he walked up to it, there was the heaviest hive out of the five carried off. To follow the rogue or rogues on the way to the town was the resolution of all in an instant. But before they had gone half a mile from the farm-house, a man coming from the town assured them that he had met no one since leaving the town, and they all returned to the house. The search was recommenced the next day, and my father hit on the idea of going through the town, and looking after the contents of his hive, which he shrewdly conjectured would be there in some window exposed for sale. He returned home full of joy, for he had found his honey—he knew it was his—there could not be another such a hive, it must be his, the comb was two years and a half old, almost as black as ink, and the honey the best in the world. But the grocer in whose window it was exposed for sale refused to give it up—he had bought it. He did not know the person he had bought it of, but he had to come to his shop again the next night, which was Saturday, and if my father would come and wait inside, he would let him see who he was. All was arranged—and what a rise! The man was the very man that returning from the town, told my father he had met no one since leaving the town. The rest may be imagined. Nothing could be done. The other four hives, however, were at once chained down to their blocks.

I must have been about three years old when these circumstances occurred, and a big boy working on the farm put me up to a way of making experiments far more remunerative than the unloading of the little creatures laden with pollen. He showed me how to hunt out the humble bee, and to rob its nest. The plan was to take a bough of hazel, and thrash the poor bees to death, then pulling the poor creatures asunder at the shoulder, pick out the honey-bag, which then lay exposed. There was no amusement in this, and I never tried it twice.

And now to return to my India tale. As soon as I saw my error in hoping to domesticate the large saurung, I was fortunate enough to find a hive of the true honey bee—like the one at home—located in a hollow mangoe tree in my compound. In my ignorance of the Indian bee, I concluded it was the same in its habits as our home bee, and therefore I prepared a box large enough to hold the bees of an English hive. The next thing to be done was to get them out of the tree. No one would help me, for all were afraid of the sting. With a good chisel and a hammer I soon managed to open a way into the hive, but while I was doing this the inmates had been singing *excelsior*, and had marched a full arm's length further up the tree. I took out all the combs, and then putting my hand up the tree as far as my arm could reach, I took out a handful of bees, and put them with the comb into the box I had prepared; but I was obliged to give this up, for as fast as I put the bees into the box they flew out again. I therefore yielded to necessity, and gave up that plan of proceeding. I then filled up the hole in the tree, as far as I could, with clay, and fixing my box up upon the tree, made such arrangements that the bees could only get in and out by passing through my box. I hoped by this means to get them into the box with their own comb full of young ones. I was disappointed however, for at five o'clock the next morning they had all collected outside my box, and were evidently intending to emigrate as soon as their arrangements were matured. I managed to be beforehand with them, for I at once took a basket and whipped them all into it, by the aid of a grey goose-quill, and having got them there, I put a cloth over it, and kept them prisoners till the next morning. They showed their displeasure with my arrangements by beginning to fly out as soon as I opened their prison basket. I now caught sight of the queen, and picking her out, clipped her wings with a pair of scissors. Knowing that the hive was now at my mercy, I put them into a large glass dish-cover, such as is used for protecting cakes and such things. A small piece of new comb was fixed in its proper position, and another day in the dark was to produce great results. It did so, for the next morning on opening the covering I saw that the workers had repaired the comb where it had been injured, and the queen had laid a few eggs, so that I felt quite sure all would now be well.

The colony had become very small. I do not think there could be more than an ounce of bees all together. Bees are a very delicate people, and the least extra trouble or exertion kills them by hundreds. But small as the colony had become, for six days it was very quiet and prosperous, and they had become so accustomed to my investigations that I could take away the glass cover altogether, and the queen herself did not show any great signs of feeling the indignity if I picked her out and put her on my hand—the workers seemed most anxious, and usually one or two would accompany her upon my hand. On the seventh day, all my amusement seemed to be at an end; a servant came to tell me that the bees were on the wing. True enough, there they were, but what was the cause? And the queen without wings; where was she? The cause was at once evident; the ants had disturbed the new colony, and not being able to drive back the enemy, they had vacated their works. The great question was where was the queen? After hunting for her for some time, I found her with only two or three attendants, and one or two ants were upon her. I picked her up and put her in a safe place where the workers could get to her, and having secured her person, I set to work to drive off the ants. They had attacked the young grubs and had killed some of them, to my great distress. At length I got them all clear of the comb, and having put the feet of the table into water, I thought all would be safe for the future, and put the colony back again with their work. Things did not, however, at all please them. I fancy an odour of the horrid little ants was left upon the comb, for every now and again, an offended bee would buzz in the greatest anger, twizzling itself round and round for a second, and then rush off to another place. A great reduction in numbers had taken place, and at noon every day the few that remained took wing—I kept them in my room, where I could constantly watch them—but I usually interfered in time to prevent the vacation of the hive. At last, not caring much if I did lose them, I thought I would let them go to the end, and see the result of the panic whatever it might be. The queen was evidently ill, and ceased to rush about as she usually does when there is excitement in the hive uttering the long-continued *pe-e-e-e*. The workers all flew to and fro in and out of the hive, and to my astonishment one of the workers took up the queen, carried her out, and fell with her upon the grass. This was the end of the queen and of my colony of bees, for the queen died that day and I took no further notice of the workers.

I was not long left without other hives, for the natives of the city had taken an interest in my amusement; the extempore poets made and sang songs about me and my bees, and I had friends on all sides who daily brought me news of new hives. My amusements now formed a reason for morning and evening exercise, either on foot, or on horseback, or by buggy, and the boys of the city took great interest in the little folk that afforded me amusement. I now took a number of hives in hand; one I kept in the hollow tree where I found it. I brought it home for a distance of four miles on a cart at night. I filled up the aperture by which they passed in and out, cut off the timber which was not wanted, and so rendered the tree manageable. This hive did very well in its new locality, but I could only look at them going in and out, and amuse myself by observing their wonderful industry in working. A farmer who had heard of the eccentric sahib who tamed bees and made them understand him, came and offered me a good strong hive, that had shown decided musical propensities by taking up their residence in a tom-tom.* This was a great gift, and I went by moonlight, and brought it home with great pleasure. I so manipulated the earthen jar over which the skin was drawn to make a tom-tom of it, that I put windows in it, and so got free liberty to look at my friends by night and day. Then I made a door, and so in time got free admission to make experiments. After watching for hours during several days, I managed to see the queen laying her eggs, nearly close to the door. This was just the ticket. I secured her, and put her in a wineglass with a piece of muslin over it. And then I waited to see the result. Again and again I watched for three hours, and no panic, nor yet confusion; then I thought there was a slight change in the sound from the workers; then there followed a flying out and immediate return by some; their work ceased, and in place of its merry hum there was a sort of hushing sound; then a rush here and there in disorder, and finally a general rush to the aperture of the hive, and most of the bees took wing. I knew I was master of the position, so I waited patiently till the panic subsided, and when all was quiet in the evening, I opened the door to return her majesty to her throne and people; but as I was putting her in, I observed a lump of bees about as large as a hen's egg on the comb facing me. I, therefore, put the queen back to the wineglass again, while I examined this unusual appearance; and I was well repaid for my trouble, for the little creatures seeing their sad misfortune, had begun to make a large cell for a new queen. I at once decided to keep her majesty a prisoner, to see whereunto this thing would grow. By the next morning the cell was complete, and all attention was given to the grub out of one of the ordinary cells that was in it. The new cell was placed perpendicular on the face of the comb, and I have since observed that queen's cells are always in a perpendicular position. I could not afford to let matters go too far, because I should have lost my queen by so doing, and the new queen would have been unfruitful for a long time, if not altogether barren, inasmuch as she must have gone abroad among her neighbours for a royal consort. There were at that period no drones in the hive. Within three hours after the queen was returned the intended new qneen was neglected, and the next day the disfigurement on the face of the comb had disappeared. As the spring came on, I saw the combs day by day enlarge, and immense numbers of drones—males—came out, and in due course queen's cells were formed upon the lower edges of the combs, to the number of twenty; and by the middle of February I had seen eight swarms fly off from this one hive. Some of the swarms were very small, and in the end the hive was so weak that moths got in and laid their eggs in the comb, so that the few that remained were eaten out of house and home by the grubs of the moths, which burrowed the comb in every direction, filling them with cobwebs wherever they went.

Although I was much interested in my amusement, yet I must confess to great disappointment as to the commercial results. I had hoped that we might have nice little rows of bee-hives in our gardens in India, just as one can have at home, with results as sweet and as paying, but so far as I could see, the strong instinct for emigration and colonising in the Indian bee seemed to forbid such a result. As I could now get plenty of bees, I resolved for one good experiment in the interests of commerce. I thought if I could put five or six hives together, I should have a good strong one to begin the experiment with. So now I had a six-dozen beer chest prepared for a hive, and a noble hive it was. The thing to be done was to fill it with a working colony. A Mahomedan gentleman gave me free access to his forest and zemindary, allowing me to take any liberty I pleased with those trees that had bees in them; from cutting off a limb to felling the trunk. I selected my trees, and the first was an old jammum pollard. Two good bhurrs (woodcutters) soon brought it down for me, and the bees being within 1½ foot of the bottom, I was able to reach them pretty well. But, do what I could, the bees would not remain in my hive, as fast as I took them out they flew back again into the tree. I ordered the tree to be split open in the middle—as soon as it was opened out, "horror of horrors," there lay coiled up a large khoreit snake, and every time my hand had gone in, it had gone over this snake. It makes me shiver when I think of it now, and the sight of those lookers-on who were with me is a picture on my memory still. My honest and good friend, the Mahomedan, would allow me to cut no more trees, unless I promised in future to see what sort of a nest I was putting my hand into. I of course gave the promise, and kept it. I saw my friend twenty years after the above, and he still retained the clearest possible conviction of the goodness of my kismut. May his shadow never grow less!

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* Native drum.

I got together six hives without any further trouble, and then how were they to be united? I made short work of it, by mixing a solution of sugar and water, and poured it into the hive that was to be united with the bees already in the new hive. I easily managed to get the queen, and the workers were then taken to and claimed by the old stock as a matter of course. And thus I filled my magnificent hive. It was a sight to see them work. I had the hive in a house, with a hole in the wall for going out and in, and I had doors and widows for observation. I would have no tricks with these to interfere with the commercial results. My heart rejoiced as day by day and week by week, I saw the combs grow and the inmates increase. To show their watchful care and strength, I may relate that a death's-head moth had the temerity to enter an air chamber I had made for ventilation; there he was waxed down to the board, and made a mummy as a warning to all such intruders. As the inmates increased in number, I was alarmed at the unusual heat engendered, and I did all in my power to cool them down. It was all useless, for the heat went on increasing, and the ventilators were covered with an immense amount of moisture that collected in large drops as the vapour condensed, and soon, to my utter despair, I saw combs forming for drones, and these of course were followed by queens' cells. I did all in my power to put an end to both, but the colony outwitted me, and one day I had the misfortune to see my splendid hive denuded of more than half of its population. I caught and killed the old queen who was leading them off, and the queen being killed the bees returned again to the hive. The excitement never subsided, and the next day many took wing again. I saw the bees were angry, but I did not expect the mischief which followed. I had a very tame, long-tailed, black-faced, white monkey—a longoor—and my angry bees stung him to death before I was aware of his danger. On the third day from the previous swarming, a new queen led them off again, and this time they flew away at once. I now gave up all as useless and hopeless, and prepared for one final experiment, little suspecting the good fortune that awaited me.

I removed all the combs, except one very nice new little one, and sought for and removed the queen. My object was to see how long the workers would hold together and keep to the hive after losing their queen. At first, of course, all was confusion; but they soon began to collect pollen, though their wax was all wasted. And although the pollen was collected and brought home, very little skill was shown in storing it, and most of it fell in little oblong flakes at the bottom of the hive. After six days, I was surprised to find a number of eggs on the board at the bottom of the hive. I could hardly believe what I saw. I was quite sure there was no queen, and yet there were eggs. I made a closer search, and more astonishing still, nearly all the cells in the comb I had left them had eggs in them; not one egg in each, as the queen carefully lays her eggs, but in one I counted a dozen, and there was every proof of a most careless and indiscriminate laying. I was determined to give up any time and attention that might be required to fathom the mystery; and in a short time, I saw the common worker bees laying eggs. Of course I was most anxious to see what the final result of this new fact would be. I soon saw that the eggs were fruitful, for the little worm floating in jelly appeared in some cells the next day, and things went through their usual course to the closing up of the cells. My patience could not wait for the flying insect to come out, and I opened a cell and took out a young bee nearly ready to come out; and two days afterwards, I was gratified by seeing some half dozen little black drones fly out with their usual heavy buzz. This was highly satisfactory as far as it went. It was a fact, not before known, that the workers could turn out fruitful. There was no hope for the hive, for the males do not work. Nothing more was to be learnt, and my hive died out in short time. And here was an end to my amusement with bees.

The Rev. Henry Oppermann, chaplain of the German legion employed in British Caffraria, says that in the season when the bees in that country gather honey chiefly from the Aloe blossoms, it is of a poisonous or noxious quality, causing nausea or vomiting when eaten.

Talk that does not end in any kind of action is better suppressed altogether.—*Carlisle.*

Northwestern Bee-keepers' Association.

OFFICIAL REPORT.

The third annual meeting of this association was held at the Young Ladies' Library Rooms, in Decatur, Illinois, on Wednesday evening of the State Fair week. Three sessions followed the annual meeting, two on Thursday and one on Friday. The meeting was well attended by the bee-keepers of Illinois and other States. The majority were practical men, largely and enthusiastically engaged in the culture of the honey bee. Several influential members of the press were present.

The annual meeting was called to order by M. M. Baldridge, the secretary, none of the other officers being present. Dr. J. Blanchard, of Illinois, was then made chairman *pro tem.*, but vacated the office on the arrival of M. L. Dunlap, Vice President for Illinois.

The Vice President, on taking the chair, gave notice that the Secretary was ready to record the names and address, and to receive tae membership fee of one dollar, of those wishing to join the association. Twenty-four new names were added to the list. The association then proceeded to the election of officers for the ensuing year as provided by the constitution. The following officers were unanimously elected :

President, M. L. Dunlap, Champaign, Illinois.

Vice Presidents, Lucius C. Francis, Springfield Illinois, Elisha Gallup, Osage, Iowa, H. P. Danks, Fond-du-lac, Wisconsin. [No Vice Presidents were chosen for the States of Missouri, Nebraska and Minnesota, they not being represented in the associotion.]

Secretary, M. M. Baldridge, St. Charles, Illinois.

Treasurer, James M. Marvin, St. Charles, Illinois.

The time and place for holding the next annual meeting was briefly discussed. The constitution provides that the annual meeting shall be held at the time and place of the State Fair of some one of the six Northwestern States represented in the association, which is to be determined by a majority vote of the members present.

Vice President Danks stated that he was a member of the Wisconsin Bee-keepers' Association, and that he had been requested to invite the Northwestern Association to meet with them at the next Wisconsin State Fair, so there could be a temporary co-operation of the two societies. He also stated there was quite a number of the Wisconsin bee-keepers who would like to join and meet with our society, but were this year prevented from doing so in consequence of the State Fairs being held the same week. To remedy this, he suggested an amendment of our constitution, changing the time of holding the annual meeting of the association.

The President did not think it best to amend the constitution in that respect, as he had no idea that the States of Indiana, Wtsconsin, and Illinois would be so short-sighted as to hold their State Fairs again in the same week.

The suggestion of the Wisconsin member was not supported. The secretary stated that this society held two annual meetings in the State of Iowa, and he was in favor of holding another meeting in Illinois, before changing the location; but would waive any objection to its being held in any other State the Society might select.

A vote was taken, resulting in the choice of Decatur, Illinois, as the place for holding the next annual meeting.

Dr. Blanchard, Rev. A. Salisbury and E. Daggy, were appointed a committee to ascertain how much surplus honey and how many hives of bees are represented by the members of this society. The committee was also instructed to ascertain the kinds of hives used, and the number of each kind ; also the number of hives of bees each member had in the spring.

The main object of this report is to convince the public, by facts and figures, that bee-keeping is profitable. That this information may be complete, the Secretary requests those members who were necessarily absent, to forward their reports at once to the Chairman of the Committee, Dr. J. Blanchard, Brimfield, Illinois. The Chairman will then forward the condensed report to the Secretary for publication. If the price, per pound, at which surplus honey is sold, is also given, it will add much to the value of the reports.

A committee was then appointed, consisting of the President, Vice President Francis, and the Secretary, to award prizes for the largest amount of honey that can be legitimately secured, next season, from a given number of hives of bees. This committee is to have full control of the matter. They will fix the time for selecting the bees, and when the season shall close, the number of hives to be used in competing for the prize, the number of prizes, and the amount of each. The The committee will prescribe rules and regulations in regard to managing the bees, and will require of the competitors proper evidence of the truthfulness of their reports. It will therefore be for the interest of the successful competitors not to present any Munchausen reports, for they will be carefully investigated. The prizes will be so liberal that they will be worth competing for, and it is thought that not less than two hundred bee-keepers will be on hand as competitors. All competitors must first become members of the association, which they can do by simply sending their names and address, and the membership fee of one dollar, to the Secretary, *No further fee will be required.*

The object of these prizes is to ascertain truthfully how many pounds of honey a given number of bees will store in a season, when managed intelligently and in the best possible manner. It is now claimed by our best bee-keepers that they can easily obtain a *ton of honey* as surplus, in one good season, from *ten* hives of bees ; and it is thought that the plan adopted by the Northwestern Association will bring out the facts, and astonish the uninitiated.

The committee will be prepared to report on the subject by the first of January next, and perhaps before, so as to give all a chance to make arrangements for entering the field of strife.

Rev. A. Salisbury, D. L. Adair, and James M. Marvin, were appointed a committee to prepare or receive questions for discussion.

The questions submitted during the meeting for discussion were as follows:

1. What is the best way to market honey? What is machine honey? How should it be put up for market? And at what price can it be sold?

2. Is Alsike clover a good honey plant? Is it, also, a good clover for hay and pasture? Does it bear pasturing freely? How much seed should be sown on on acre? Is it advisable to mix the seed with other grasses?

3. Can bee-keeping be made a success, so as to be profitable to bee-keepers?

4. What time in the season should bees be swarmed?

5. What number of colonies can one bee-keeper manage with success?

6. Has the bee malady, known as the cholera, re-appeared this season? If so, where, and to what extent? Is it contagious, and what is the cause and cure?

7. Does the disease, known as foulbrood, still exist in the Northwest? If so, where, and to what extent? Is the disease contagious and curable? Is it safe for western bee-keepers to obtain queens or bees from infected districts?

8 Can bees be wintered safely in the shallowest hive in use?

9. How many pounds of honey can be extracted per hour with the centrifugal machine? What per centage of honey is thus removed? Can *thick* honey be readily removed without special treatment? If not, what special treatment is necessary?

[Conclusion next month.]

[For the American Bee Journal.]

Bees in Tompkins County, New York.

Mr. Editor:—As the honey season in this vicinity, for the past summer, has closed, I propose to report briefly the result of this season's operations with bees in this section. Scarcely any surplus honey has been gathered by them, and many of the few swarms that issued are in a starving condition. Some hives are half filled with comb for the most part empty, while others have a few pounds of honey. Old stocks that did not swarm are in a fair condition; but the young swarms, if not fed, will perish the coming winter. I have not in twelve years known so poor a season for bees in this section. The cold weather we had in June did the mischief, as all strong stocks were then well filled with brood; but the scarcity of honey which occurred in consequence of the protracted cold wet weather, caused the bees to kill their drones, and the queens ceased laying. Many strong colonies starved at that period.

Bee culture, in this vicinity, is still in a very rude state. The old-fashioned box hives are still most commonly used, with holes in the top, where boxes are placed to receive the surplus honey, if there chance to be any stored. In the fall most of the best stocks are taken up. These are what beekeepers here call old stocks, such as swarmed in the spring; and thus many are taken up whose combs are only one or two years old. Now, stocks that have swarmed usually have young and prolific queens, and are much better than the swarms that went out accompanied by the old queens. Stocks here are rarely spared over three years, though occasionally you may find one. You see that most beekeepers here would be called old conservators. A patent hive is at once pronounced a *humbug*, by most of them, simply because they have had a friend or some relative who purchased such a hive years ago, and probably the bees did not do well in it, and they of course laid all the blame on the hive. I admit there are many hives now before the public that are not worth the cost of the lumber they are made of. Improved hives, without improved management, are no better than old box hives, in the hands of a great many people.

Bees in this vicinity are wintered out-doors, and little attention is paid to them from November till April. Then, most of them being half dead or in a starving condition, few stocks swarm, and the cry consequently is, "My luck with bees has vanished! I will take them up, or sell out, and quit the bee business!" Now I think the bees and poor seasons are not near so much to blame, as the careless and negligent apiarian. Last winter a great many bees died in this vicinity—not entire stocks, but perhaps two-thirds of a colony—leaving the survivors weak and dispirited; and by the time these had regained strength and were in a condition to swarm, the better part of the brief honey season had passed away. As regards wintering bees out-doors, in frame hives, it was a great mystery to me that my bees in such hives, with honey boards removed and a good layer of dry corn-cobs substituted, died out much faster than in old box hives standing side by side. This mystery was, however, explained by Mr. Aaron Benedict, in the August number of the Bee Journal, (vol. V, page 28.) That one article alone is worth to me the price of many years' subscription to the Journal, and I thank friend Benedict very kindly for the valuable information it contains.

I like the Bee Journal better and better, and would not be without it for ten times its cost, and sincerely hope it will be properly appreciated by every cultivator of bees, and all give a helping hand to its support.

D. W. Fletcher.

Lansingville, N. Y.

Bees in Cities.

A gentleman in Chicago, whose name is well known to the readers of a very well-edited religious journal, last spring became interested in beekeeping. He procured a hive of Italian bees. From this he had two swarms; afterwards he divided the original swarm, taking away a full swarm and brood enough for half a swarm, taking with this four frames of honey. He has taken forty pounds of surplus honey, and has now in the hive more than the bees will need. Remarkably successful as he has been, we believe he thinks himself best repaid in the interest he has taken in studying the mysteries of beekeeping. We commend his example.

[For the American Bee Journal.]

The Honey Season at Tolcno, Ill.

Please allow me to inform you what we have been doing in the bee line, in this place, this season.

I wintered thirty-two stocks, and have had twenty-two increase. One colony swarmed three times, and in seven weeks swarmed again. Swarms all very large. The bees of these are Italians. The same colony has stored over 60 lbs. of nice box honey. My stocks were very weak in the spring, as last year was a very poor one for honey—young swarms starving to death on their stands in October, 1868. But this year has been the best I ever knew. Bees swarmed until August, and some second swarms yielded swarms. All of my stocks, except about ten, stored honey in the boxes, giving me in all 2,200 lbs., nearly all from white clover, as there is no timber nearer than four miles, too far for the bees to fly to it.

I had in the spring fourteen stocks of black bees, and eighteen Italians—some pure and some hybrid; I could see no difference in these. I got more honey from the Italians, and not one of the black colonies swarmed. I have now Italianized all, except eight, and will Italianize the rest soon.

We hear a great deal said about the Italian bees not being superior to the blacks, and I know a man who says so. He got two or three queens, and no more. They soon ran out, and so he condemns them. I think if his bees were all Italians, he would soon see the difference.

Bees do not commence to swarm here as early on the prairies, as they do near the timber; but afterwards I think they do better; and I think the honey is better, as we never have any bitter honey here.

I will describe the hive I use. It is one I got up myself, and is used by nearly all in this vicinity. The lower part is made of $1\frac{1}{4}$ inch lumber, planed on both sides. It is fifteen inches square inside, and has ten frames. The inside is rabetted down at top $\frac{7}{8}$ inch, so that when the frames are in, and the frame that the boxes set on, the edge comes up so as to keep the little boxes in place. I make a frame $\frac{1}{4}$ inch thick to go on the top of the frames around the edge and across the middle each way, so the boxes will rest on it and it will be tight. I do not nail the bottom board to the hive. I use four boxes each 5 inches high and $6\frac{3}{4}$ inches each way, so it is square. The top and bottom of the box is wood $\frac{1}{4}$ inch thick, with four corner posts $\frac{5}{8}$ inch grooved for the glass to set in. The bees begin to work in the box soon, as there is no honey-board, and the passage is so direct that they keep up the heat early in the spring and late in the fall. If you do not wish to have the bees go into the boxes they can be turned over. The top of the hive is made of inch stuff, and the body of the hive is rabbetted, so the top part sets on and the rain cannot get in. When the hive is all complete with hooks, handles, and painted, it costs about $1 50 for material, and a carpenter can make two per day. The frames are Langstroth's. Bees will winter first rate in this hive, as the frames are $11\frac{1}{4}$ inches deep. The frames are, top with rib to guide the bees to build straight combs $\frac{7}{8}$ inch wide and $\frac{1}{4}$ inch thick; sides $\frac{7}{8}$ inch wide and $\frac{1}{2}$ inch thick; bottom $\frac{7}{8}$ inch wide and $\frac{1}{4}$ inch thick. In opening the hive, take off top and boxes, then the frame that the boxes set on; then push the frames, and they are easily taken out.

The honey with the box I have described, sells in Chicago at thirty-five cents per pound.

I have wintered my bees on their summer stands for a number of winters, and they always came out all right.

I have taken the Bee Journal from the commencement, and think it a great help.

H. CHAFFEE.

TOLONO, Oct. 3, 1869.

[For the American Bee Journal.]

Letter from New Hampshire.

MR. EDITOR:—I like the suggestion that we are to have ages, pursuits, and other facts of interests in regard to prominent beekeepers, not only of the present period, but of past times. It would no doubt be gratifying to many to have short biographical sketches, from time to time, until the leading apiarians of the past are recorded in a prominent form in the Journal.

Enclosed is a photograph of your humble servant, who bought his first swarm of bees on the day he was eighteen years of age, and has been in the bee business thirteen summers since that time. And, by the way, I wish to remark that most of those of my acquaintance, who are largely interested in bee culture, are young men; and those who do not see any improvement or undervalue the Italian bee, are generally older men. A few weeks ago I encountered a man apparently fifty years of age, who said he believed the Italian bees were all a humbug, and no better than the natives; that they would turn out like the Rohan potato; with other similar disparaging remarks. I told him that ten years' trial had only served to establish their reputation and increase the demand for their dissemination; that I had this season sent one hundred queens to one man in Pennsylvania; besides numerous others to parties throughout the northern and some of the southern States. "Yes," said he, "distance lends enchantment to the view; anything seems to be better, if you have to send a good way for it." I soon learned that he commenced beekeeping a few years ago with great expectations of profits, with a small outlay of time, money, or talents. This has been a poor season, and he has become discouraged.

In this section, and so far as I can learn, throughout New England, there has been but little surplus honey stored this season. Cold weather has been the cause of this. There was a great abundance of white clover, but when in blossom the cold prevented the secretion of honey. I managed to get about twenty-five pounds of honey per colony, by using a machine and preventing the production of new swarms. If those of our friends who have too many bees, and too little honey, will follow the suggestion on page 88 of the October number of the Bee Journal, and use a machine for extracting the honey, they may count on a fair yield each year, whether other beekeepers get any or not.

The farmer who has a flock of sheep need not necessarily raise a lot of lambs; neither need the beekeeper raise swarms. Bees must, however, have room to work freely, if we would get the full benefit of a large colony.

For several years past I spent about half my time in the bee business; but the past season I have devoted all my time to it, besides having an assistant occasionally, and have yet not been able to do all that ought to be done.

If our friend, who is curious to know what a professional beekeeper can find to do in the winter, will get into the business largely, so that he will have full occupation for his time during the summer, he will not be troubled to find employment in that connection in the winter also.

The past season has served to demonstrate the practicability of sending queens by mail. Out of over two hundred sent by me in that way, the loss has been only about three per cent., and many of them have been sent a great distance. One went to New Orleans, and one to the State of Mississippi. They have been in the mails, in one or two instances, a week or more, though I intended to have them all go to their destination the same week they were put up.

With many a wish for the prosperity of the Bee Journal, I remain, as ever, yours,

J. L. Hubbard.

Walpole, N. H.

[For the American Bee Journal.]

Divers Remarks.

I see a communication in the October number, from Mr. H. Alley, about queens meeting the drones twice. Although I have not raised as many queens as Mr. Alley, yet I have raised a large number within the last five years, and have never known an instance when a queen returned with the evidence of copulation to be seen, but that she was fertilized.

Three years ago, in the forepart of June, we had a week or more of cold cloudy weather, during which the drones in my apiary hardly flew out at all. On the 20th we had a bright beautiful day, and they were out in great numbers. [Just previous to the commencement of the cold spell, or about the 12th, I found my nuclei boxes were well supplied with young queens, which I was anxious should become fertile, as I had immediate use for at least a dozen.]

On that day, at five P. M., I examined my nuclei, and found eight queens had the unmistakeable evidence of fertilization. I then clipped the wings of three of them, and in a few days had them all in colonies, or used them in making artificial swarms. They all proved fertile, as they have in every case where I have found the genitals of the drone protuding from the queen. I have rarely seen it the next morning after the trip; and it is removed *somehow*. I think you are mistaken in your conclusions, friend Alley, although I wonder at it, with your experience.

And now for Mr. Green's suggestions on page 81. For one, I fall in at once: so here goes. I, D. C. Hunt, Yankee born, forty-three years of age, a mechanic by trade; after knocking about the world over, by sea and land, spending six years in the south, and being driven out by the rebellion, have settled in the good old State of Vermont, and own a farm, yet make beekeeping a speciality.

Furthermore, another correspondent suggests that the patrons of the Bee Journal send the editor their photographs, that he might, I *suppose*, be surrounded at least by the shadows of congenial spirits. I wish to improve upon *that*, and have the face of our respected editor in return—every one, of course, not forgetting to inclose with his own photograph twenty-five cents; to send his photograph to all his subscribers would be too heavy a tax for us to ask of him.

How is it, Mr. Editor, will that arrangement be agreeable?

D. C. Hunt.

North Trenbridge, Vt.

☞ The incoming photographs are always very acceptable, duly prized, and carefully preserved for that "*three banded* album" *in posse.* But we really cannot give any assurance as to returns—there being, as yet, no such thing *in esse.*

[For the American Bee Journal.]

The Honey Slinger.

I believe the "Melextracterer," "Hruschka," "Honey-pump," or, as one of my neighbors calls it, the "Honey-slinger," is going to be used quite extensively. It has been made, thus far, with a frame work, in which the comb frame is placed, and this frame work is made to revolve with cog-wheels, crank or string, within a barrel, tin case, or wooden box, which catches the honey as it flies out of the comb. The barrel, can, or box, is necessarily large, clumsy to handle, and difficult to keep clean; and I wish to suggest what seems to me to be an improvement, doing away with the barrel. I would use the frame work and shaft precisely as now constructed; then have made a tin cylinder that will be just large enough to drop down over the frame work, and as long as the frame is deep. It can be held in place, on the frame, when in operation, by any simple device; either by pins at the bottom or hooks at the top. Let this tin cover revolve with the frame work. The honey will be thrown out against the inside of this cover, will run down to the bottom, and can be caught in any receiver, as a tub, a large tin pan, or the like. A tin pan made for the purpose would be best. Let it be two inches larger in diameter than the tin cover, and six or eight inches deep, with strong handles on the sides. In the centre of the pan, have fixed a socket for the foot of the shaft to rest in; and support the top of the shaft by any arm fixed in a convenient place. The advantage of this arrangement consists in having the receiver in two parts, both of which are light, can be easily handled, readily kept perfectly clean, and cost but little.

R. Bickford.

Seneca Falls, N. Y., Oct. 19, 1869.

[For the American Bee Journal.]

Introducing Queens.

I have had some experience in introducing queens last summer, some of which may not come amiss to other beekeepers.

Desiring to remove two black queens from their hives, to introduce hybrid queens in their stead, I searched for them at 1 p. m., giving the bees sugar water to subdue them. I failed to find the queens then; but searched for them again at 5 p. m., on the same day, when I succeeded in finding them. I removed them and introduced the others as Mr. Langstroth does, viz: remove the black queen and let the hive remain quiet six hours; then give them the Italian queen caged, and in forty-eight hours release her. In ten or twelve days, in looking in front of one of the hives I found one of the Italian queens dead; and at the other hive I found an imperfect black queen dead.

Now what seems strange to me is this, that on looking for the queen at 1 p. m., there was no brood in the hives, and I supposed there was none in them at 5 p. m., when I removed the queens. Yet on examining the hives after finding the dead queens as above stated, I found a spot of brood as large as the palm of my hand, with a number of queen cells in each hive. The queens must have laid the eggs in the interval between 1 p. m. and 5 p. m. the same day, that is, within the brief term of four hours—which looks strange to me. Can bees by feeding their queen, have her develope eggs and lay them in the short space of four hours, after she has stopped laying at least twenty-one days? If so, she must have a powerful *will*, for the old saying is—" where there is a will there is a way;" and the queen must be able to find that way wonderfully quick!

Perhaps it is a common occurrence to find queen cells as above, and for queens to lay eggs in so short a time; but as I am a novice in beekeeping, I would like to hear from experienced beekeepers, through the Journal, whether the like occurrence has been observed by them.

D. H. Coggshell, Jr.

West Groton, N. Y.

[For the American Bee Journal.]

Experience in Beekeeping.

Mr. Editor:—In renewing my subscription, it occurred to me to give you a little of my experience in beekeeping. My father bought a swarm of bees when I was yet a little boy. It was in an old-fashioned cone-shaped hive. I used to watch the bees very diligently and with great delight. This was in the fore part of the summer, and they soon began to hang outside. One day we were away from home, and when we came back I went out to the hive as usual, but the cluster was missing. My father said they had swarmed, and went around looking on trees and bushes; but they could not be found. Probably they had decamped, and gone to the woods.

My father always kept his bees in box hives, as he knew no more about bees and beekeeping at the end of many years, than he did when he commenced. I came to Wisconsin from the State of New York some fourteen years ago; and went to beekeeping for myself, on a small scale, in box hives, about nine years ago. But after using these hives several years, I found that they were not the kind I wanted, as I could not control my bees in them as I wished to do.

I was very anxious to learn all I could about bees and their management. The first work I got hold of was Weeks' small book. At that time I thought it was a great work, but since I have more experience I found that it is not of much account after all. The Agricultual Reports contain better material. Mr. Quinby's and Mr. Langstroth's books furnish more ample instructions; and then the American Bee Journal is just the thing for the practical beekeeper to keep him up with the times in the progress of improvement.

I have seventy colonies of bees in frame hives. All have been Italianized, except a few which are hybrids yet. I like the Italian bees very much, although in some cases rather cross. One word about barren queens. Last year I introduced a handsome young Italian queen to a swarm of black bees, and supposed all was right. After a month or two I examined them, and found no brood. They were pretty well reduced, and I obtained a swarm from one of my neighbors and put it in with them; but the eggs laid in the cells would not hatch. I had another stock of the same description this year. Now, can friend Gallup, or any one else, tell us the reason?

In 1868, the bees here did not do very well in surplus honey, though they gave us plenty of swarms; but this year, 1869, they gave us neither swarms nor surplus honey worth mentioning. In fact, they were starving with me at the beginning of June, and I had to resort to feeding to save my weak swarms. I actually found one swarm on the point of starvation. It has been a poor season here this year, there having been much cold and wet weather; but I live in hopes that next year will be better.

Last spring I built a high board fence around my apiary, to keep the wind from blowing on the hives. I also took out the frames, cut out the drone combs, and inserted worker combs instead. I think it pays, as it conduces to the storage of surplus honey. I stick pieces of comb, five or six in number, crosswise in the boxes, as they come out easy and are nicer for the table. I put on my boxes crosswise, with the honey-board off. I think the bees go to work sooner when this is done, than when they have to pass up through the honey board. One more question: How much drone comb should be left in a hive with a strong swarm, to satisfy the bees, and keep them from building any to breed in?

The beekeepers' study now is about wintering. I built a cellar last year, in which to store my stocks. It was made as follows: Dimensions 10 feet by 23, inside measure; grouted up with lime and gravel wall 7 feet high. Sills laid on the top, and joist piked to the sills; a floor laid on that, and covered with one foot of sawdust; rafters put up, and a board roof; with five ventilators going through the floor, and only one through the roof, each having a slide whereby it may be shut or opened at pleasure, in order to control the temperature of the interior as much as possible. I have also another four inches square, inside measurement, running under the ground some three rods in, that the air may be warmed somewhat when it comes into the cellar under the floor. I saw in the Journal that the flue should come in at the top; but it seems to me that such ventilation in some such days as we had last winter, would make the place too warm and the bees uneasy. The sides are lined with boards, and a floor in the bottom, and shelves arranged along the outside of a capacity to accommodate 150 colonies. I have a partition, and double doors. I calculate to give my bees plenty of upward ventilation.

Now, as for wintering bees out-doors, and saving bees and economizing honey in this northern climate, I do not believe it can be done without more trouble and expense than it will cost to build a suitable place for wintering. I have tried wintering out-doors; in dlumps and in trenches. The bees do not keep so well, and the trouble of taking them in or out in a hurry, causes so much confusion and mixing up, that I became disgusted with it.

If I should wish to increase my stock of bees any more, I would swarm them artificially. But as I have got about as many colonies now as ought to be kept in one place in poor seasons, I should like to learn the best means yet devised to keep them from swarming.

I wish the Bee Journal came once in two weeks, instead of once in four.

Albert Potter.

Eureka, Wis.

[For the American Bee Journal.]

Concerning Sundry Things.

As a rule in natural swarming, if the queen bee cannot fly, so as to unite with the cluster, the swarm will soon return to the hive from which it issued; but I had a case in the summer of 1868, which was an exception to this rule. My plan of swarming was then to cut the queen's wings and when a natural swarm appeared, catch the queen and cage her till the swarm began to return, then liberate her at the entrance of the hive I wished the swarm to occupy, when all would enter without further trouble. The colony alluded to swarmed in a natural way, and clustered clean. The mother was not found, the swarm was hived, but soon returned to the parent stock. The next day it issued again, and clustered clean; queen not found; swarm hived, and it remained. I was sure the mother could not be with them, but waited a few days to ascertain whether the swarm had not a virgin queen. I saw no indications of one being present, but the contrary—most of the comb built being drone comb. There were portions, however, composed of worker cells, and there was considerable pollen deposited in the hive. I gave them a sealed queen cell, which was immediately destroyed. This was repeated several times, with the same result. I also lost two fertile queens in my attempts to supply them; but finally succeeded in inducing them to accept a sealed cell. During all this time I never seen a queen in the hive, although I repeatedly searched for one. There were no eggs of any kind deposited; the bees filled the hive with comb, and deposited a good deal of honey. They were hybrids.

The same season several of my colonies swarmed without making any preparations whatever for such an event—not even having an egg in an embryo queen cell. In one case, I opened the hive *nineteen* full days after the first swarm issued (there having been no second swarm) to see whether the young queen had become fertile; and found, to my surprise, a large number of *sealed queen cells*, out of several of which queens issued while I held the frame in my hand. In this case the bees had not only probably made no preparations for swarming at the time the swarm left, but moreover, nineteen days from the egg were required to mature every one of the queens they reared—and the number was not less than a dozen. This colony was healthy and populous.

The only writer on the natural history of the queen be, who has ever allowed nineteen days to mature a queen from the first laid egg, so far as my reading goes, is Mr. T. F. Bingham.

If any of the readers of the Bee Journal have tested the method of introducing queens by the use of grated nutmeg, will not they report their success or failure in the Journal?

Will Mr. Quinby please inform us, through the Journal, how he uses strips of tin in connection with the tops and ends of his comb frames, to form the top and sides of the brood chamber? Also, describe his device for causing frames to stand on bottom board?

W. C. Condit.

Columbia Center, Ohio.

[For the American Bee Journal.]

Entrance Blocks to Langstroth Hives.

Formerly, whilst using the regular entrance blocks to the Langstroth hive, I often felt the need of doing something that I could not accomplish with them. The blocks I now use are about an inch square, and run the whole length of the entrance. I nail narrow cleats of different thickness across each end on two adjoining sides of the block, the cleats being put on flush with the ends. The other two sides of the block are left smooth. The names I gave these blocks will measurably indicate their use. Thus—

The Common Block

is for ordinary use. On one side, No. 1, of this block the cleats are $\frac{1}{4}$ inch thick; and on side No. 2, they are the sixteenth of an inch thick. Either of the cleated sides, laid on the bottom board, with the corresponding smooth side turned against the front of the hive, gives a long shallow entrance for the bees, and ventilates the combs all alike. This block I use all the year round, unless it becomes necessary to give more ventilation, or remove all blocks of every description. With side No. 2, the drones are shut in or out at pleasure; but when the stocks are strong and the weather warm, it becomes necessary to use

The Drone Block.

Both sides, No. 1 and No. 2, of this block are provided with cleats three-sixteenths of an inch thick. One of the cleated sides turned to the bottom board and the other against the front of the hive, gives double the amount of entrance and ventilation. With the smooth sides of any of the blocks bees are readily shut in, to remove to and from their winter quarters, or otherwise; also, momentarily in case of robbery. But in the latter case, ventilation must be given; for which I use

THE ROBBER BLOCK.

On this block the cleats on both sides, No. 1 and No. 2, are ⅛ inch thick. It is used in the same manner as the drone block, and gives considerable ventilation, while no bees can pass in or out. The back ventilators of the hive may always be used to give an opening corresponding with that given by any of the blocks in use at the entrance.

Both drone and robber blocks should be fastened with a thin wedge pushed in between the ends of the blocks and the sides of the hive. When opening hives under circumstances likely to induce robbing, I find it a good plan to use the robber block until the bees have recovered from their confusion and are ready to defend themselves.

To obtain the results above stated the measure of the cleats must be exact, and the sides of the block as well as the bottom board and hives all straight and true. Blocks made on the same basis can be used also on some other kinds of hives. Of the common blocks, one for each hive should be provided; of the other two kinds, a less number will do for emergencies.

HENRY CRIST.

LAKE P. O., STARK CO., OHIO, Nov. 1, 1869.

[For the American Bee Journal.]

My Experience.

MR. EDITOR:—As I am a clergyman, you will allow me to follow the ruling passion of the ministerial fraternity, by dividing my remarks into heads and horns. I shall present results rather than theories:

1. DOES BEEKEEPING PAY?

I keep bees for my own recreation and table; hence have but few swarms. I commenced the present season with three. They increased to six; and have yielded me three hundred (300) pounds of cap honey. It is worth thirty cents per pound in this market.

Suppose I had paid ten dollars, in the spring, for each colony (and they are worth that or more in the hive I use), then we should have the following result:

DR.	
Three colonies, at $10, each	$30
Three new hives, at $5, each	15
Honey boxes, say	5
Total	$50
CR.	
By 6 colonies in good condition at $10, each	$60
" 300 lbs. honey at 30 cts. per lb	90
Total	$150
Net profit	$100

or two hundred per cent. on the investment.

I have not estimated the great satisfaction I have had in attending to them.

2. WHAT KIND OF HIVE IS BEST?

I am often asked this question; but my experience is not sufficiently extensive to furnish a positive answer.

Two of my three stocks in the spring were in J. Hazen's Eureka hives. One of them, slightly tinged with Italian blood swarmed and went to the woods or lost their queen, as I found them queenless, with queen cells capped. This swarm gave me 67½ lbs. of cap honey.

The other, full-blood Italian, swarmed May 19th, and from it and the issues of May 19th, I made another; so that stock increased to three. From the old one I took ninety-three (93) pounds of cap honey; and from the issue of Aug. 19th I took seventy-two (72) pounds. Thus, from one colony in the Eureka hive, I have two new swarms and one hundred and sixty-five (165) pounds of honey. Or, from the two old stocks in the Eureka hives, I have an increase of two swarms and two hundred and thirty-two (232) pounds of honey—an average of one hundred and sixteen (116) pounds. Who can give a better show this year in Wisconsin?

The other colony of the three old ones, is in a hive similar in general form to that of Mr. Langstroth. From it I have one swarm. The old stock gave me thirty-four and a half (34½) pounds of box honey, and the swarm thirty-five and a half (35½) pounds. The new one or swarm is in the Eureka hive. This is an increase of one swarm and sixty-seven (67) pounds, against an increase of one swarm and one hundred and sixteen (116) pounds in the Eureka. But there are so many contingencies, that I am not prepared to say that the hive made all this difference; though I can see no other cause. The last was Italian also.

3. HOW TO PREVENT SWARMING.

The box described by Mr. Quinby in the "Bee Journal," works like a charm. My Italian swarm that issued May 19th, cast a swarm six different times, during the season. But her royal highness being secure in the box, returned and of course the bees followed her. (I ought to say that the last time they hung clustered for seven hours, and finally returned. Will some of our bee men explain?) I am much obliged to Mr. Quinby for describing it in the Journal. Cutting out the queen cell is no preventive against swarming, as the bees sometimes go as soon as eggs are laid in the cells; at least my May 19th swarm did that.

4. WINTERING BEES.

Last winter I put mine in the cellar, which is dry, and I removed the honey-board, nailing wire cloth in its stead. I also closed the front entrance with wire, and let the bees have full ventilation above and below. They came out this spring in very fine condition, with some brood in all stages, when set on their summer stands. I shall try the cellar again.

And now, as no sermon should have more than four heads, I close.

A. C. MANWELL.

WHITEWATER, WIS., Oct. 9, 1869.

[For the American Bee Journal.]

Successful Practice.

Mr. Editor:—I wish to give your readers, through the Bee Journal, my practice and experience with bees during the last five months. I live in the district of country where the bee disease prevailed last year; consequently I had no bees this spring.

On the 17th of May last I received from Mr. Grimm, Wisconsin, a small colony of Italian bees. They were received in prime condition, with every comb entire.

Now for my practice.

A few days after I received them, I took out five frames with the adhering bees and put them in another hive, leaving three frames and the queen in the old hive. This I left where it was, and put in a division board. The other I filled up with empty frames. On the 10th day, I took a frame from No. 2 and placed it with a queen cell and adhering bees, in an empty hive, inserting a division board, just leaving room for the bees to pass around the comb. I shut them in until the queen was hatched. They threw off a small swarm. I now had four colonies. On examining No. 2, a day or two after it had swarmed, I found it had no queen. I gave it a frame of comb out of No. 1, and gave No. 1 a frame of comb from No. 2.

I now felt that I would be fully satisfied if they made honey enough to winter on. I gave No. 3 two or three frames of combs out of the other stands, and took out the division boards. They all increased finely in bees and stores.

On the 17th of August No. 2 threw off a very large swarm. A few days later two others swarmed at the same time, and clustered together. It was now so near the last of August that I should have returned them to the parent hive if they had settled separately. But there were so many bees that it seemed as if with a hive full of combs there would not be room for them, so I placed them in an empty hive. It is now full of comb. A few days later the other swarmed. This I returned to the parent hive. It came out only the one time.

A few days previous to this, I put on the honey boxes. I took them off again two days ago, and got about fifty pounds of beautiful honey.

If any of your readers have done better than this, I hope they will report, through the Bee Journal, just how they effected it. My increase is six from one, all full frames of combs and honey, and about fifty pounds of honey in boxes.

This is the second year that I have had Italian bees, and every swarm that came out before July, swarmed again in August.

My bees swarming late in August last year, and having young bees very late, convinces me that the old age theory will not account for the bee disease.

A. Dunlap.

Terre Haute, Ind., Oct. 9, 1869.

Bees may live sometime without pollen or water, but hardly a day without honey or a suitable substitute.

[For the American Bee Journal.]

Common Bees and Italians

Mr. Editor:—I saw an article in the October number of the Journal, headed, "The Italian Fling." I am not interested in selling Italian queens or honey-emptying machines, and I state matters as they are.

On the first of last June, I had one hundred and eight colonies of bees, and Mr. Marvin had about the same number. His were all Italians. One-half of mine were black bees, and the other half were crossed with Italians—some of them the second time. *Now*, I have two hundred and thirty colonies, all of which will winter; and have obtained from one thousand to fifteen hundred pounds more honey than Mr. Marvin has. Mr. Marvin used the emptying machine. I took off my honey in boxes His is worth twenty cents per pound, mine thirty cents.

Now I do not wish to say anything against Italian bees. I think it a great improvement on the black bees to cross them. The black bees will make as much honey as the Italian, if they receive the same attention.

I have been in an Italian apiary not less than ten times the last summer, and watched the movements of the Italians. I have no axe to grind in the matter, and state the matter as I see it. I think Mr. M. had better defend his own case, and then we shall get the facts. Mr. Baldridge has been very wild in his statements, and I think he will be willing to correct them.

S. Way.

Batavia, Ills.

[For the American Bee Journal.]

Wintering Bees.

Mr. Editor:—As it is not yet settled which is the best plan for wintering bees, I will give the way I have wintered mine the last three winters with good success; and I do not think a better has been proposed for this latitude, (41° north.) [I pack them with straw, shavings, sawdust, carpeting, woolen rags, &c., bottom, top, side, back, and front, putting a strip of board, as wide as the alighting board at the entrance raised three-eighths of an inch, to keep the entrance open. In packing the top of the hive, I first cover the frames with paper to keep the honey clean; then put on a frame of boards, one to six inches deep, and fill it with sawdust, shavings, chaff or straw. If the top is movable, it does not need a frame. If the hives are near together, fill in bottom with straw, &c. If they stand alone, I sometimes make a rough case and put it over the hive, with an entrance cut for the bees; and between the hive and the case a board with an entrance cut in the lower side, to keep the packing from the passage way. I sometimes leave the case on all summer. In that case I have an entrance at the back, to let air in when necessary. In very cold weather, I contract the entrance. When it is warm the bees fly without opening doors, as Novice proposes.

John Winfield.

Canfield, Ohio.

[For the American Bee Journal.]

Wintering Bees.

Much has been said on the subject of wintering bees. Many ways have been tested and many plans proposed. So much so, that the inexperienced are at a loss to decide as to the best mode of getting their bees through the long cold winters in good condition. An expensive bee house will not suit the mass of beekeepers; as many, like myself, have their bees at different locations, and on premises that belong to other people, and they consequently do not wish to build houses for other persons.

I will give my plan of wintering bees, which I prefer to any I have tried. First, I aim to provide the colony with sufficient winter stores, if they have not secured a sufficiency for themselves. Have the hive full of combs if possible, but if that cannot be done, put in a partition board so that the chamber where the bees are is *full of comb.* I then take off the honey-board, and lay a strip about eight inches long and one inch square *across* the frames, and cover the whole with pieces of blanket, old clothes, coffee-sacks, or newspapers, or something of the kind that will let the moisture pass through, retaining the heat with the bees. If paper is used, strips tacked around are necessary to keep it to its place. The strip crosswise of the frames about the centre of the hive, causes a good winter passage for the bees on each side of it. I then fill the cap full of clear dry hay or straw well packed in, and put it on. Then close the entrance by screwing on a thin strip with two or three notches cut in its lower edge to give passway for the bees to go in and out. I am never afraid of giving too little ventilation, if there is space enough for a dozen bees to pass in and out at the one time. The stronger the colony the more open space is left.

I now put scantling, or something that answers the purpose, under my hives (if they have not legs), so as to have them set about six inches from the ground. Then I drive a few stakes into the ground on each side of the hive and the rear, some eight or ten inches from the hive, and fill in around the hive with hay or straw well tramped down, as high as the top of the hive, cover the whole with hay, fodder, boards, or something that will keep all dry, and the work is done. In cold climates, where the thermometer would frequently range below zero for days in succession, the front end should also be protected, by putting strips on each side of the entrance, and laying on a board under which the bees could have a passway; fill above the board as above directed, and the hive would be completely protected from the cold.

The advantages of preparing bees in this manner for wintering, may be summed up as follows:

It is cheap, and readily done. The bees remain on their summer stands. The preparation for wintering can be attended to at any time after the close of the honey season, and remain in such condition until after the cold rains of spring, thereby stimulating early breeding, as the sudden changes of weather have little effect on the interior of the hive. The warm rays of the sun in winter do not induce the bees to come out, unless it is warm enough for them to come out with safety. They can be examined at any time, and supplied with food if necessary. I have never found frost on the inside of a hive so prepared. Last winter I had a *weak* colony (to which I was feeding honey) build combs in February, which is an evidence that the hive so prepared keeps warm. In feeding, I have but to raise the cap, and with a knife cut through the covering that is over the bees, and insert the tube of my bee-feeder, replace the cap, and the work is done.

Bees prepared as above directed as soon as the honey season closes, are in no danger of being robbed, as the entrance is small; and it thus also excludes mice, &c. Can any other system of wintering foot up as many advantages? If so, let us have it through the Bee Journal. I use the Langstroth hive.

J. S. Flory.

Fayetteville, West Va.

[For the American Bee Journal.]

Something Strange.—Honey Dew.

Mr. Editor:—There has been much said in the columns of the Journal about honey dew. Some affirm that this strange phenomenon is caused by insects (aphides); while others believe it to be falling vapor, or, in other words, genuine honey dew. I am one of the latter class. I admit the existence of insects which discharge a fluid that bees will work on. But a case in point recently transpired in this city, which more fully convinces me of the falling, at times, of real honey dews.

A few rods from my residence there are three large cottonwood trees. On the 12th of September last, one of my neighbors came to me, to inform me that my bees were swarming, and that they were trying to alight on one of those cottonwood trees. On examination I found the bees were working on the leaves on one side of the tree which stood near the street. In a short time quite a crowd of passers-by had congregated. Some wanted to know who had poured honey on that tree; while others wished to know if bees made honey from cottonwood leaves? Well, I did not know what to make of it. I climbed the tree and cut branches from all parts of it, to ascertain whether the cause originated from insects. After carefully examing the leaves, one by one, I found no insects, nor any trace of insects of any kind. On the other hand, I found the leaves presenting evidence that looked much as if some power had showered strained honey over the leaves and branches of the tree. Now if this fluid came out of the leaves, why is not the honey found on the lower as well as on the upper side of the leaf? My opinion is that it came from abeve, in the shape of honey dew.

I would like to know what your unbelievers think of this case.

H. Faul.

Council Bluffs, Iowa, Oct. 8, 1869.

[For the American Bee Journal.]

Winter Protection.

Here is a winter protection worth trying. Take three boards about a foot longer than your hive; lean them against your hive even with the top, and fill out the space so made with hay, litter, evergreen tops, &c. In front where the fly-hole is you can set a board also, if the colony is very weak, and leave a small space open for the bees to fly out of.

Last February I set my bees out-doors. In March the thermometer sunk below zero. My stands, then very weak, so protected did not die. The same boards I use in summer for shading.

When wintered in the cellar, Mr. Thomas says it does not matter whether you shut the fly-hole or not. When the temperature rises above fifty, my experience is that the bees leave the hives.

Last spring I had three stands left out of fifty-five. The rest died of the disease prevalent here last year. I used the same frames, hives and honey this summer; bought four colonies, and now have thirty-eight. Last year at this time they had commenced dying; this year none have died as yet. Old age did not kill my bees last year, for I raised bees all summer and till late in the fall; nor was the disease contagious, as some one thought. Neither did the black bees alone die, for mine were all Italians, except a few; and the three stands that survived were hybrids. I lost some young queens this year, after they had commenced laying, and last year likewise—which I think may have some connection with the disease. They left the hive, and were not accepted when put in queenless colonies. Can anybody explain this?

The season here was a very good one; but unfortunately for me, my bees had to multiply, instead of storing honey. Once this summer, I opened a hive that had an Italian queen introduced about ten weeks before. The black bees seemed to have all gone; but suddenly I was stung on the hand, and on looking, I saw, to my great surprise, that it was by a black bee. All the other bees in sight were Italians. This certainly speaks well for the good temper of the Italians. It was the best proof I have ever had. The bees and queen were very fine, and the latter came from Mr. Gray's apiary.

T. Hulman, Sr.

Terre Haute, Ind.

[For the American Bee Journal.]

Sugar Candy.—An Inquiry.

As pure sugar candy is considered good feed for bees, by Mr. Langstroth and other apiarians, I would like to have some of those who have had experience in making candy, give us, through the Bee Journal, the receipt for making it. This would greatly oblige me and others, as bees in this section need feeding, and a good receipt would come in play. We have obtained no box honey, and very few swarms, this season, in this neighborhood.

D. H. Coggshall, Jr.

West Groton, N. Y.

[For the American Bee Journal.]

A Horizontal Queen Cell.

When raising queens to Italianize my bees this season I found a queen cell placed in a horizontal position, and for curiosity's sake I saved the cell, and succeeded in raising a perfect queen, which mated with a black drone and produced bastard progeny. Some apiarians think that the vertical position of the cell with the opening downward materially affects, in some way, the developement of royal larvæ. A fact like the above-mentioned furnishes conclusive evidence that the position of the queen cell does affect the developement of the queen.

In his work on the "*Hive and Honey Bee*," third edition page 63, Mr. Langstroth says—"While the other cells open sideways, the queen cells *always* hang with their mouth downwards," and further on says—"They open downwards simply *to save room*." Mr. L. says they always open downwards. I think he is mistaken in this, as I have found one in a horizontal position. Perhaps I may never find another so placed. I think he is right in saying that they open downward simply to save room. The queen cell I speak of was in a nucleus hive, with plenty of room either downward or sidegways. Have experieneed queen-raisers had a like experience or is this an exception?

D. H. Coggshall, Jr.

West Groton, N. Y.

[For the American Bee Journal.]

Why Natural Swarms Excel Artificial Swarms.

Querist says (and truly) that an artificial swarm located in an empty hive, will not, during the first week, gather as much honey, or build as much comb, as a natural swarm; and asks the reason why. Several reasons have been given in the Bee Journal with which Querist is not satisfied and calls for further reasons. Here is mine:

An artificial swarm will not prosper, at first, like a natural swarm, because, as generally made, *they have not a supply of young bees, while a natural swarm has.* A natural swarm is made up of all the bees in the hive at the time the swarm comes off, from the oldest with their ragged wings, to the youngest that can fly. Many even too young and weak to fly come out, or are crowded out, with the swarm, and may be seen on the ground near the hive, after the swarm has settled. Having, in a natural swarm, bees of all ages, we have therefore bees qualified to perform all the duties necessary for the prosperity of a new colony, viz: we have the younger bees whose occupation within the hive is to generate the wax, to build comb, and to find the larvæ, when developed from the eggs of the queen. Then we have all the older bees of the hive, except those that were out foraging at the time the swarm came off, and these last, together with the just hatching bees, are now the sole occupants of the old hives.

The older bees of our new swarm are the outdoor workers, who gather the honey while the young bees generate wax, build comb, and feed the larvæ. Thus we have in our natural swarm an abundance of bees exactly suited, by *their various ages*, for performing every duty essential to perfect success.

Now, what bees have we in an artificial swarm? In all the plans with which I am acquainted for making artificial swarms we obtain *mainly*, for such swarms, only those bees that have, by repeated flights from their hive, become so accustomed to its location, that they will return to the same spot, even if the old hive be removed and a new one put in its place; that is, we have mainly old bees. Now, if every such bee, namely, those accustomed to fly, *and no others*, be taken from a strong colony, how many bees will be left in the colony? Or, in other words, how many bees of the old colony shall we fail to get in our new artificial swarm? And, again, what would be the value of those bees in our artificial swarm, if we could secure them, as we do in natural swarming? It has been found by careful examination that a young bee does not leave the hive for honey-gathering until it is about sixteen days old. From this established fact it would follow that in a populous colony where two thousand young bees are hatching daily, there must be, after making an artificial swarm, about thirty thousand young bees remaining in the old hive, which we therefore fail to get in our artificial colony; and a very disastrous failure it is, too, for these are *the very bees we need* in our new colony for building the new combs, and are in fact the only ones in the whole hive, qualified by age and instinct for doing this important work.

To make an artificial swarm a success, therefore, I would *drive out all the bees* from a populous colony, brushing every bee from every comb with a new hive placed on the old stand; letting the old hive, with a fertile queen (caged two days) on the stand of a second populous colony—removing the second to a new location; or I would drive from five or six colonies, setting the driven swarms in empty hives on their old stands respectively, and supply workers to protect the brood of the old hives, by dividing among the bees from a single colony brought from a distance, inserting caged queens as before mentioned, closing the entrances of the old hives, so that only a single bee could pass at a time. If I had combs to spare, I would insert two in each side, at one-third or at one-quarter of the width of the hive, from each side. This arrangement would cause the swarm to cluster mainly between the two combs—would give the queen a place to continue the deposition of eggs without interruption, and would furnish a temporary supply of food for the youngest bees, and would induce the building of straight combs, throughout the hive—four rather important items.

If I wished to make artificial swarms, I would do it as above, believing it to be the nearest possible approach to natural swarming. But *I* do not wish to make such swarms. In fact, I do not *wish* my bees to swarm at all. I make my hives very large, to prevent swarming as much as possible. I prefer, if I want more stock, to purchase them of my neighbors, and keep my own at work making box honey. One large colony, if kept from swarming till late, will in a good season (not one like the present) make surplus honey enough to pay for five or even six swarms. But if allowed to swarm early, the rule is with me for neither old stock nor new swams to make any honey. There have been a few exceptions to this rule. Notwithstanding the large size of my hives, and my wish to prevent it, my bees have generally swarmed, but not till after making seventy-five or a hundred pounds of surplus honey; and then the swarms are so immense in size that, although the season may be nearly past for *surplus* honey, they manage to fill their hives in a remarkably short time with a sufficiency for winter.

R. RICKFORD.

SENECA FALLS, N. Y., Oct. 2, 1869.

[For the American Bee Journal.]

That Proposition.

Friend Gallop reminds me of the Irishman that was spoiling for a fight, and, after other means failsd, he put on a long-tailed coat and went dragging it through the crowd, daring any one to step on it. In the September number of the Bee Journal, page 49, friend Gallop says, "if friend Puckett accepts my proposition, you will in all probability get reasons *pro* and *con*." To what proposition friend Gallop has reference, I am at a loss to know, unless it is in regard to the Langstroth hive. Friend Gallop says it needs two inches more in depth of comb, in Iowa, where he uses them. This may be so, and it may not be so. There is at least a possibility that friend Gallop may be mistaken. At all events he has not yet proved it to be true. But I never said that the Langstroth hive is perfect. Yet I have said that, so far as I have tried it, it has answered all the purposes that could be expected of any hive. My bees passed the last winter on their summer stands, in Langstroth's hives, and did well. My Italian stocks began to throw off (natural) swarms on the 15th of May, notwithstanding the cold and backward spring, whereas my neighbors' bees, in other form of hives, did not swarm till late in June. I use the Langstroth hive in Northern Illinois; winter my bees in them on their summer stands, and they do well.

During my visit this fall to the west, I met a man named Salisbury, in Northern Illinois, a very intelligent man, that understands his business. He had over three hundred stands of bees. He informed me that he was using the Langstroth hive, with but seven inch frames; and he thought but six inches would be better still. But he winters his bees in a cellar.

There are two extremes. Mr. Gallup says deeper "frames," and Mr. Salisbury says shallow frames. So, if Mr. Gallup is still spoiling for "fun," as he calls it, I turn him over to Mr. Salisbury—hoping that friend Gallup will stick to the truth, and not state things merely to see "what effect it will have."

Friend Gallup, is or is not the Langstroth hive "rejected all over the west?" Again, is there or is there not such a disease as dysentery amongst bees—*your* bees excepted? These are questions for you to settle, before you invite me to anything further, especially when it is merely to gratify your great desire for "fun," regardless of facts.

B. PUCKETT.

WINCHESTER, IND.

☞ Several errors occurred in Dr. Puckett's last article, in the September number. On page 58, second column, line 26, for Gallup says that "bees do not make honey," read "bees *do* make honey;" and in the next line, for "suppose they do not," read "suppose they *do*." Some other errors in that number of the Journal escaped correction, as we had no opportunity to read the *proofs*, and could only glance hastily over the revise.—ED.

A Profitable Apiary.

A correspondent of the Prairie Farmer gives that paper an account of a visit to the apiary of Messrs. Francis, not far from Springfield, Ill. They have one hundred and twenty swarms of bees—Italians and crosses of Italians with black bees. They think the crossed bees are the best workers. From a hive of half Italians they have taken, this season, one hundred and sixty (160) pounds of honey, which netted about thirty cents per pound. From the whole apiary they have taken about four thousand (4,000) pounds of honey, an average of 33⅓ pounds or $10, to the hive. The sale of bees paid all expenses of the apiary, leaving the honey net profit. They use the Langstroth hive exclusively.

Bees' Wax.

American beekeepers are perhaps not generally aware of the enormous consumption of bees' wax in Europe, and the pre-eminent value of the article produced in the United States. Independently of the very large yield of mineral and vegetable waxes, England alone must consume more than *two thousand tons a year*, to the value of $2,100,000! Its worth is assessed by color, purity, and the melting points; and the latter process readily exposes adulteration by foreign matter. To-day's quotations, taking gold at 131, are as follows, viz:—

	Cents per lb.	
American, bright pressed yellow....	45	to 51
American, rough mixed yellow.....	43	" 43¾
West Indian, yellow................	41¼	" 43¾
East Indian, yellow................	41¼	" 43¾
African...........................	36¼	" 41¼

As an instance of the consumption, it may be mentioned, that one European palace alone is said to burn ten thousand wax candles *nightly*. The method of lighting them is ingenious. The respective apartments being prepared with the candles, an inflammable and scented web-like link (gun cotton) runs from wick to wick. Immediately one end of the link is lit, the flame rushes round the connected wax lights with lightning rapidity, and in a moment they are all simultaneously inflamed! As the link consumes and lights each candle, an agreeable scent is emitted, and the apartment at once, from one end to the other, are thus not only illumined, but perfectly refreshed and perfumed, as by magic.—*A. L. Macrae's* (*Liverpool*) *Courier.*

[For the American Bee Journal.

Bee Feed.

In the October number of the Journal a correspondent calls chicken-meat as food for bees "something new under the Sun." To many it may be so. I heard of it being so used several years ago. My informant told me he often fed his bees on chicken-meat, to take them through the winter. I was quite diverted at the idea, and having a good opportunity to test the new and to me doubtful theory, I slily (for fear of being laughed at) put into my feeding boxes a "dainty mess" of well cooked chicken; and, strange to tell the bees did "go for it," actually licking the bones!

That same winter I was driven to many experiments in bee-feeding, as, like many a new beginner, I was in haste "to get rich;" so that I had a number of colonies and but little honey, and as the fall was very unfavorable, I could get no honey conveniently. I fed a number of these weak colonies, from January to April, without honey. The principal feed I used was prepared as follows. I had bread baked of rye, buckwheat, or wheat flour, light as possible, cut into thin slices, and well soaked in brown sugar syrup. The bees used up the greater portion of the bread as well as the syrup. Sweet apples and peaches, stewed and well sweetened, they ate eagerly. In the spring they were much reduced, and seemed to have no disposition to hunt stores, until I supplied them with a quantity of genuine honey. Then they seemed to "wake up," and went to work; and by fall they were not more than in good wintering condition.

Since that time I am fully persuaded that it does not pay to put weak, or sparely supplied colonies into winter quarters; and I have learned to adopt the motto—"STRONG COLONIES, OR NONE." I am assured that *the best bee feed for all* practical purposes, is *good*, PURE HONEY.

J. S. FLORY.

FAYETTE CO., WEST VA.

[For the American Bee Journal.]

"Golden Rod and Aster."

Mr. Wagner says, in the November Bee Journal, that he has never seen bees at work on the golden rod. Two years ago I should have said the same, and was surprised to see it mentioned as an excellent honey plant in several "bee books," for there was a field of some twelve or fifteen acres covered with it, within less than an eighth of a mile of my bees, and they took not the slightest notice of it. The field is high and dry, and the golden rod was the small species, from a foot to eighteen inches high, which always grows in such situations.

But summer before last, as I was crossing a low marshy piece of ground, at least a mile from home, I found the bees very hard at work on a large species of golden rod, which I had never noticed before, but have seen several times since in similar places. It was very different from the common kind, being from four to six feet high, and bearing flowers of a lighter and more greenish yellow. As many of the bees at work on this patch were Italians, they must have come from my hives, for no one else in this neighborhood has them; and to get there passed directly of the field already mentioned.

I think from this, and from what I have since seen, that the common golden rod secretes very little if any honey, while the marsh variety yields large quantities. It is probable Mr. Wagner has seen only the former kind, which is the most abundant.

In this section of the country the asters are invaluable as fall forage for bees. Let the season be wet or dry, cold or hot, we are certain to have a continuous bloom of them from early in September until a really hard frost occurs. The light early frosts, which kill the buckwheat and other honey plants, do not affect them in the least.

My *Italian* bees have never failed to secure enough honey from asters to carry them through the winter, even when there was hardly a pound in their hives at the end of August. The honey is rather dark and has a peculiar flavor, which some persons dislike, but I think rather pleasant. It evidently agrees with the bees perfectly, for mine have wintered on it for two seasons past and came out in excellent order in the spring.

Daniel M. Worthington.

Elkridge, Md., Nov. 20, 1869.

[For the American Bee Journal.]

My Experience with Alsike Clover.

When I visited Germany and Italy, two years ago, I bought an imported fifty pounds of Swedish or Alsike clover seed. This seed was for the most part given to my nearest neighbors, free of charge, hoping that the honey gathered by the bees from the blossoms of the clover, would compensate me for the cost of the seed. It was sown at the rate of about four pounds to the acre, and did not germinate well, though it ultimately proved to have been sown thick enough. It wintered well, and grew nicely to a length of from twelve inches to thirty last spring. It commenced blooming about the 5th of June, or at the same time with common white clover. It remained in bloom till about the 25th of July, when it was cut by me and my neighbors.

I was of course anxious to see the great piles of honey my bees would gather. They seemed to like the blossoms very well, and worked on them whenever the weather was fair. But, alas! after examining about a dozen of my hives every day during the whole season, I could never discover more than about a hundred cells filled with a very thin watery honey, and these were regularly found empty again next morning. My fond expectation of being able to improve the honey pasturage of the poor location of my home apiary, was therefore sadly disappointed; and if the bees gather no more honey from this clover next season than they did in the last, I shall be forced to the conclusion that neither the white nor the Alsike clover yield any honey in the location of my home apiary.

Adam Grimm.

Jefferson, Wis.

[For the American Bee Journal.]

Several Items.

Smoking Bees.—Many persons who try to manage bees, I fear, do not fully understand the value of smoke, nor the best method of applying it.

When I began to use frames, although I had read "Langstroth" and "Kidder" attentively, I did not practice smoking, as I believed that it was injurious to the brood, if not to the bees; and I am still rather inclined to that opinion, in regard to tobacco and puff-ball smoke. I had some laughable scenes in trying to open hives without the use of smoke, especially during times of scarcity of honey. Since then I have tried every method that I have seen recommended, and some that I have not; and have finally settled upon the use of fine, dry, pine *sawdust*. This answers the best purpose of anything that I have tried; and is always accessible. I burn it in a sheet-iron "smoker" three inches in diameter and about six inches long, which has already been described by some one in the Bee Journal. Fire it up with a hot coal from the stove; and by removing the cover before laying it down, it will retain fire nearly an hour.

Wintering Bees.—Last winter we carried all our bees—about twenty swarms—into a room up stairs in the house. It is a tight-plastered room—dimensions 12 feet by 14. The windows were let down for ventilation, but darkened with boards, which nearly spoiled it all. The hives were set upon the floor, and ventilated at top and bottom. They did not winter well, although only one died. That was a common "box hive," and from appearances must have been about dead in the fall, as it contained over twenty pounds of honey and no bees, in the spring. It swarmed three or four times during the previous summer, and was probably put in the room weak and queenless.

The main difficulty in the wintering of these bees, seemed to be, a lack of ventilation, as they would fly out into the room some during the mildest weather, and consumed too much honey to suit me. I was surprised at the amount of heat generated by those twenty swarms. A bit of snow or ice, put in for the purpose of cooling them, would melt in the course of a week, any time during the winter.

The hives we use are, as nearly as I can ascertain, similar to Quinby's improved, although I do not know the exact plan of his In one thing I think ours are superior. It is in not having the frames connected in any way with *any part* of the hive. The interior dimensions of our hives are 28 inches by 16, and 12½ inches deep. The ends are used for surplus honey boxes, or frames. In winter we turn the frames bodily, facing the front entrance, put in an extra division board, and fill the empty spaces which are thus formed, with old woolen clothing, hay, or any material which is not a good conductor of heat. Thus they are left upon their summer stands, with entrance facing southeast. I cannot tell how it will work until spring, as this is the first time we try them so. Will report in the spring.

I. F. Tillinghast.

Factoryville, Pa., Nov. 6, 1869.

Alsike or Swedish Clover.

Within the past few years, Alsike or Swedish clover has been somewhat cultivated in this country, and highly lauded as a forage plant. Some eight or ten years ago, I received a small package of the above-named variety of clover seed; sowed it early in the spring, on a good and well-prepared soil. A large portion of the seed failed to germinate, but such as did, made a good growth, which was mown in the fall, and the land top-dressed. The second year I got two fair crops. The third year June grass was largely mixed with the clover. On the fifth year the Alsike was missing; the tough-swarded June grass rooted it out entirely.

In the spring of 1867, I obtained one pound of Alsike clover seed, which was sown early in May, with a thin seeding of barley. I gave the land a heavy dressing of superphosphate. Both the barley and the clover did finely. In 1868, mowed the clover twice; first crop badly lodged. This year (1869), first crop very good, with quite a show of other grasses, which showed more largely in the second crop. The intruding grasses are red and white clover; timothy, red-top, and June grasses; and probably in 1871, the Alsike will have disappeared.

It makes the finest quality of clover hay, yields a large amount of seed, gives a good yield, and while in blossom is a favorite resort of honey bees and all other honey-loving insects. If this clover could be kept free from other grasses, I think it would prove an admirable dry forage for milch cows and sheep at yeaning time.

L. Bartlett,
In "Country Gentleman."

[For the American Bee Journal.]

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I was of course anxious to see the great piles of honey my bees would gather. They seemed to like the blossoms very well, and worked on them when ever the weather was fair. But, alas! after examining about a dozen of my hives every day during the whole season, I could never discover more than about a hundred cells filled with a very thin watery honey, and these were regularly found empty again next morning. My fond expectation of being able to improve the honey pasturage of the poor location of my home apiary, was therefore sadly disappointed; and if the bees gather no more honey from the clover next season than they did in the last, I shall be forced to the conclusion that neither the white nor the Alsike clover yield any honey in the lacation of my home apiary.

Adam Grimm.

Jefferson, Wis.

[For the American Bee Journal.]

The Dzierzon Theory.

Mr. Editor:—I will reply once more to J. H. Thomas's statement in the June number of your Journal. In that statement he expresses his surprise at the mistake, as he terms it, made in an article I wrote for the Journal some time before, concerning the reproduction of the honey bee. Dzierzon was the first discoverer of the true system and theory concerning the propagation of the bee. He says, if an Italian queen meets a black drone, her drone progeny will be pure Italians, but her worker progeny will be hybrids. And also if a black queen meets an Italian drone, her drone progeny will be blacks, and the worker progeny will be hybrids.

The above theory agrees with my experience in every respect.

J. H. Thomas's new theory, as set forth in the Journal, is, that, if an Italian queen meets with a black drone, her whole system becomes impregnated with the black blood, and hence her drones would not be pure. And if such a drone would meet with a pure Italian queen, her worker progeny would lose one or more of their yellow bands.

Now, if this theory is correct, I would hold Mr. Thomas right here—1st. That the drone progeny, as well as the workers, must show evident marks of black blood; and so long as Mr. Thomas fails to show this, his new theory must fall to the ground, and stay there.

I will here give a little of my experience in this matter. In the year 1867, I bought a full-blood Italian queen of Mr. Langstroth for twenty dollars; and, after seeing her progeny, I was convinced I had the worth of my money. That year I raised twelve fertile queens, and every one was fertilized by a black drone; and I was convinced that the drone progeny was pure, while the workers were hybrids. In the year 1868, I bought another full-blood Italian queen, and raised sixteen fertile queens. Of these, all but two met Italian drones. The worker progeny of the fourteen which met Italian drones, were all alike marked full Italian. These queens must have been fertilized by drones which were produced by the queens bred the year before and which were fertilized, as already stated, by black drones. Hence the case is clear that Dzierzen's theory will stand unscathed, firm as the rock of Gibraltar.

Inclosed please find two dollars for your excellent Journal. It is edifying to read it, as one writes *a*, *b*, *c*, and another *c*, *b*, *a*; hence we have a thorough discussion of every intricate question.

H. Rosenstiel.

Lena, Ill., Oct., 1868.

Bees gorged with honey never volunteer an attack.

THE AMERICAN BEE JOURNAL.

WASHINGTON, DECEMBER, 1869.

Special Premiums and Club Terms.

THE HORTICULTURIST AND THE AMERICAN BEE JOURNAL.

By special arrangement, we offer The Horticulturist as a premium for five new subscribers to the American Bee Journal; or will offer The Horticulturist and American Bee Journal on club terms together, for $3 75, full price being $4 50, each club subscriber being entitled to a choice steel plate engraving, Country Life, and a copy of Adair's Annals of Bee Culture.

We commend The Horticulturist to the attention of lovers of fruits, flowers, and rural embellishments. Having been greatly improved this year, it will be found one of the best and most valuable horticultural journals published in the United States.

The Triangular Comb Guides.

☞ We understand that, in various quarters, persons are endeavoring to collect a "royalty" from beekeepers who use the bevel edge or triangular comb guide, alleging that the device is patented, and that they are agents of the patentee. We do not believe that there is any valid patent on the article, and think those thus engaged in levying "black mail" are rendering themselves liable to prosecution for obtaining money under false pretences. Mr. Langstroth, (who, we regret to learn, is again suffering from an attack of the disease to which he has for many years been subject at intervals,) prepared a full history of these comb guides shortly before the return of his illness, which is now in our hands and will appear in the January number of the Bee Journal. Meantime we advise beekeepers to be on their guard, and not suffer themselves to be imposed on by swindling landloupers.

☞ In our last issue a selected article was inadvertently and erroneously credited to the "Louisville (Ky.) Farm Journal," of which name there is no paper in existence. Credit should have been given to the "*Farmers Home Journal*," an excellent agricultural and family paper, published at Lexington, Ky., by James J. Miller, esq., at three dollars per annum, and which well merits a liberal patronage.

☞ Of the two specimens of bee plants sent to us from New Cumberland, West Virginia, the first is *Aster ericoides*, already repeatedly noticed in the Journal as furnishing excellent fall pasturage. The second, or "blue blossoming" is *Aster cordifolia*, widely diffused and common species found in groves and copses, and bearing an abundance of flowers. The writer (who neglected giving us his name) says of this latter plant—"I never saw it here till this fall. It is growing all along the river hills, among the rocks, and on the poorest land we have. It commenced blooming about the 20th of September, and is in bloom yet (Nov. 8). It grows about as tall as buckwheat. Early frosts hurt it very little."

☞ We have a number of communications from valued correspondents, the publication of which circumstances beyond our control constrain us to defer till next month

Correspondence of the Bee Journal.

Sterling, Ills., Oct. 14.—I am new in the business of beekeeping, having been engaged in it only three years, but nothing has attracted or fascinated me so much. I have succeeded tolerably well, except last season, 1868. In the spring of that year I had forty colonies, most of them purchased of a neighbor. When I bought them they were in the old style of hives, and in poor condition. I transferred them into Langstroth hives, and came near ruining all of them, because there was then no honey in the flowers. Most of the colonies could not even repair the combs which were transferred. Only a few of them succeeded in gathering honey enough to carry them over the winter. The rest I had to feed, and some of them starved to death. In the spring of 1869, I had only nineteen colonies left, most of which were in a very poor condition. But I fed them and did all in my power to keep them alive. The spring and forepart of the summer were very unfavorable. My bees labored under every disadvantage, my place being new and affording no protection. When the apple and the cherry trees were in blossom, the bees were compelled to remain in their hives, on account of prevalent cold winds and rain. I became very much discouraged, but during the months of July and August, things began to assume a more favorable aspect.

My colonies are mostly Italians, and in Langstroth hives. I use two kinds of hives. the shallow chamber and the deep; and prefer the former, believing that the bees will store more surplus honey when kept in the shallow chamber hives. I generally remove the honey board, and have my honey boxes so that three will cover the whole surface of the frames. By so doing, bees will work up quicker and store more honey.

I have increased my stock from nineteen old colonies to thirty-eight; and if I had desired it, I might have increased them more. The swarming propensities of bees were greater this year, than I have ever known it to be before. I was constantly guarding against over-swarming. If I had not had such bad success last year, I should probably have allowed my bees to swarm as much as they were inclined to do, and would undoubtedly have called it great success.

From eighteen old colonies and increase, I took thirteen hundred and seventy-five (1,375) pounds of surplus honey. One old colony gave me a swarm and one hundred and eight (108) pounds surplus honey; and the young swarm gave me ninety (90) pounds. Six young swarms average seventy-five (75) pounds to the hive. I had one natural swarm (second swarm) on the 3d of August, that filled its hive below, and stored forty-seven (47) pounds of surplus honey.

We have not had much frost yet, and on the 9th of October my bees were still depositing honey in the boxes.

Enclosed find two dollars for your valuable and interesting Journal. I have read every volume since its publication, and am convinced that no beekeeper can succeed without it.—George Mohler.

Fair Dale, Oswego Co, N. Y., Oct. 20.—Bees in this section have done but little up to the first of September, only securing provision enough to supply present necessities. But when the buckwheat began to blossom, the weather became fine, and bees gathered honey and bee-bread very fast, so that one-quarter to one-half the stocks will winter. I will have to feed two or three black colonies, to carry them through. The Italian bees have proved their superiority with us this season. I have just commenced Italianizing.—M. A. Dumass.

Fredericktown, Mo., Oct. 16.—I was somewhat discouraged, but have done well, considering I removed last spring carrying eight hives with me. I sold four, and now have twenty-six in good condition for winter. Inclosed find two dollars for the American Bee Journal, which welcome visitor I still want. I remain a friend to all beekeepers, and particularly to the Journal.—J. B. Dines.

Council Bluffs, Iowa, Oct. 20.—I promised to let you know how much honey my swarm that came off on the 6th of September made from that time till frost cut down the flowers. They made just seventy-two (72) pounds. Who can beat that so late in the season?—H. Faul.

Sandusky, N. Y., Oct. 25.—This has been the poorest season for bees that we ever knew. We started in the spring with one hundred and forty-three (143) colonies, and increased them to two hundred and fifty (250). This fall we have reduced them to two hundred and ten (210), and fed them 1,850 pounds of coffee sugar. We hope we shall not see another season like this very soon.—Baldwin Bros.

Ripon, Wis., Oct. 28.—I have to report to you the poorest season for bees I have seen in this State for thirty years. In looking over my seventy stocks the fore part of this month, I found thirty of them not to have honey enough to carry them through December, and forty of them needing feed to carry them to May. Taking up thirty, and feeding forty to make them strong for winter, is the work I did. My old stock hives were in the poorest condition. One of them—an old box hive, I have had bees in for sixteen years, and the combs were in fine condition—this being the first year in sixteen, that it has been in poor wintering condition, or omitted to cast a swarm, or put as much honey in boxes as any of the best prime swarms in the yard. I think this shows us plainly that if combs are kept in good order, they can be used for twenty years, as store combs and for breeding.

Last year, 1868, from eighty swarms I had no honey put in boxes; this year no honey, and lose almost half of my bees! Question—*Is this a good country for bees?*—R. Dart.

Fair Grove, Mo., Oct. 25.—Bees have done well in this section, the present year, in swarming. The honey season was good for a while, but cut short by the dry weather. The bees in this region, are natives. Heretofore the distance from railroad has been so great that it was difficult to procure Italians; but as we now have railroad advantages, I think another season will materially change the breed. At least I shall make the change in this vicinity.

I have been carefully reading the *Bee Journal* for a few months past, and am so well pleased with it that I shall not sever my connection with as a reader while it maintains its standing and I am able to raise two dollars for it annually.—D. H. Webster.

Rockville, Conn., Nov. 3.—Bees have done very poorly in this vicinity this season. Not more than half the stocks are in condition to winter, unless fed. I prize the *Bee Journal* very much, and should be sorry to lose a number. I look for it eagerly, and seldom leave it, until I have read it through.—E. Bill.

East Hardwick, Vt., Nov. 2.—The honey season here has been the poorest for ten years past. The frequent rains and cold winds almost prevented any secretion in the flowers; consequently there are many hives not well provisioned for winter.

I commenced the season with sixty-five colonies, and have obtained 1,450 pounds of surplus honey, with only an increase of ten swarms. I have mainly followed Mrs. Tupper's plan of artificial swarming, as given in the Report of the Department of Agriculture for 1865. I consider this a safe way if a fertile queen is given to the new swarm at the time it is made; otherwise it becomes too much reduced before they can raise one. I find one objection to it. In taking away the full combs and replacing them with empty frames, especially if the drone comb was all or nearly all taken away in the spring, the bees are quite sure to build all drone comb, even if guide worker comb is given. Will some one who is posted, tell us how to prevent this?—J. D. G.

Eminence, Ky., Nov. 5.—I lost all my bees the season previous to this, "of that bee disease." Last spring I purchased one stand of Italians, and now have six strong colonies and have taken forty pounds of surplus honey. There are about a dozen colonies of black bees within five miles of me that survived the "bee disease;" and they all together have done no more than my single stand of Italians. I cannot do without the Bee Journal.—E. C. Bright.

East Bethel, Vt., Nov. 4.—The honey season was very favorable here, up to the close of clover blooming. The basswood blossomed very beautifully, but did not yield any honey. The consequence is that new swarms are very light, and have to be fed.

I have been troubled with queens laying eggs in honey boxes. On one hive I put three boxes, and by the 20th of June they were filled. Then I put three more under them, by raising them up. I soon found that two of the boxes were nearly full of drone brood. I spoiled all of it by running a knife through it. But as the honey season wound up soon after, the bees did not repair damages by filling them up with honey. The boxes I put under were partly filled with comb, also with brood in one of them. I learn that a great many beekeepers in this vicinity have been troubled in the same way. I never saw anything of the kind before in my apiary. The hive above-mentioned did not send out a swarm. Wishing success to the Bee Journal, I subscribe myself, Charles S. Paine.

Appleton, Wis., Nov. 6.—I have travelled most of the time for about four weeks this fall, calling on many beekeepers in northern Wisconsin, and find a general complaint that bees have done poorly in that part of the State. No surplus honey has been obtained; many are discouraged, and will sell all the bees they have for one dollar a swarm. I have a neighbor that from eighty stocks last spring, had only four swarms come out during summer, and is now taking up many of his stocks that have not honey enough to winter. But we will hope for better days; we have two poor seasons, perhaps the next will be better; "three times and out" is the motto.—A. H. Hart.

Pocohontas, Mo., Nov. 12.—The first part of the past season our bees, in this section of country, gathered just enough honey to keep them brooding and swarming for an unusual length of time. Then the dry hot weather set in, and by the first of September they were nearly out of honey. But our fall season was the best we have had for some years. They are now in better condition for wintering than they have been for the last two years.—I. C. Wallace.

Worthington, Pa., Nov. 19.—Bees have only done on an average in this locality. Too much rain. Besides, the buckwheat—which is our fall pasturage—was only a light crop, and mostly of the gray kind, which scarcely has any honey in it. Please change my address. I cannot do without the Bee Journal: wish it came oftener.—J. W. Barclay.

[For the American Bee Journal.]

Wintering Bees.

I have often read that the cellar is the best place for wintering bees, provided it is kept dry and from freezing. I have had some experience in this direction, and find the cellar, when kept from freezing is *too warm*, so that the bees get uneasy, many getting lost by coming out of their hives. Last winter I put into the cellar sixty swarms in box hives. They were put in about the first of December. The hives were set in rows, two feet from the bottom, the entrances being left open. In a short time the air of the cellar was very warm—in fact, warmer than in the upper part of the house in which we live! The combs molded rapidly, and the bees died so fast that I removed them from the cellar in about four weeks. I then made bee-houses for them, so constructed that the bees could leave the hives at pleasure.

It is my belief that a cellar is a poor place for bees. Of all the places I have tried, I find the open air much the best. The fresh air keeps them healthy.

A. J. Brundage.

Ottawa, Ills.

AMERICAN BEE JOURNAL.

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[For the American Bee Journal.]

A Leaf from History.

In May, 1869, my father, then in the enjoyment of a temporary release from ill health, commenced the preparation of the following article. The pressure of affairs in the apiary delayed its completion, and returning illness left it in its present condition. Being led to believe that the facts therein contained should be given to the public at the earliest possible moment, I have taken his notes and copied them in precisely their present order. I will add that the almost continual bodily prostration of my father by disease, has prevented any application on his part to the Patent Office for the independent patent referred to in the extract from our circular, and to which we believe him justly entitled. I much regret that the article cannot receive the finishing touches he designed for it; but, as it is, it is an interesting and valuable piece of reading to all using the triangular or bevel-edge guide in his movable frames.

J. T. LANGSTROTH.

November 8, 1869.

HISTORY OF TRIANGULAR OR SHARP EDGE COMB GUIDES.

It may be interesting to many readers of the BEE JOURNAL, to know the leading facts in the invention of the triangular or sharp edge so generally used for securing straight combs.

In my movable comb frames, (Patent applied for in December, 1851, and granted October 5, 1852), I used small pieces of worker comb for guides. After many unsuccessful attempts to secure straight combs without such guides, I devised in February, 1852, the triangular edge, (see note A). These guides were extensively used and sold by me in hives made in Greenfield, Massachusetts, in the spring of that year. Finding them to answer, substantially, the ends intended, I applied for a Patent for the device before it had been in public use two years. The Office declared an interference between my claim and those subsequently made by Mr. Geo. H. Clark, of East Washington, New Hampshire. Testimony was taken by both parties, and before the matter was decided by the Commissioner, a new application for a Patent on the same device was made by —— May, of Illinois; who claimed a secret use of the same two or more years before Clark, and the Commissioner declared an interference between the three parties and required testimony to be taken. Before, however, the time of hearing came, he decided that substantially the same device was shown in a note to the English edition of Huber, and that neither of the parties was entitled to a Patent. Subsequently Mr. Clark, after repeated rejections of his application, by persistent efforts, procured a Patent for his device.

The testimony taken in Mr. Clark's case shows that he was led to the use of the sharp edge by seeing bees build a small piece of comb on the edge of a square stick accidentally put into a hive in such a position as to present a sharp edge. From the testimony of his brother and sister, his only witnesses, it appears he kept the matter a profound secret; and they testify to his making only two hives with sharp edges on the bars—and to only one in which bees were put. Now, as bees sometimes pay no attention to the guides, but build their combs at right-angles to them, the fact of their once building them on the line of the guide, though a very strong presumptive evidence that they will usually do so, seems hardly to be that absolute proof which is necessary to constitute an "invention." It may be, however, that Mr. Clark used these guides in more than one hive, and that he was prevented from proving this by the rule then existing, which did not allow him to testify in his case.

Since the matter was before the Patent Office, I have discovered that the celebrated English surgeon, Hunter, in an article published in the ———, very clearly shows that he was well acquainted with the sharp edge device for making the combs run in any desired direction. It could therefore only be patented on some new and useful combination.

In my original application in 1854, supposing myself to be the first inventor, I claimed the device absolutely for bars, frames, and all kinds of hives and surplus honey receptacles, the guides being either large or small bevel, (see note B). Had I then known of Hunter's device, I should have confined my claim to bars and frames. Mr. Clark, in his original application, made some six months after mine, did not claim the sharp edges absolutely, but the beveled bars in combination with a saw kerf running parallel with the bars, to which the bees could cling when hived, and which he thought rendered them more disposed to follow his guides.

That the Patent Office did me a great wrong in declaring an interference between my claim and Mr. Clark's, will be admitted by all familiar with Patent matters. They ought to have granted my claims, and also those of Mr. Clark. whose Patents then would have been subordinate to mine, and could not have been used without license from me. It would then have become necessary for me, after discovering what Hunter had done, to have had a re-issue of my Patent, limiting my claim to the use of the triangular edge on bars or movable frames. If Mr. Clark had felt that his invention was prior to mine and covered the same thing, he could have applied for a re-issue of his Patent; and if he could have proved priority, the Office would have been obliged to grant him a re-issue covering the claim of my Patent; and it would have remained for the courts to decide, when asked, whose Patent was valid.

The state of my health has delayed me in making such statements as the case seems to demand, so as to show why, after Clark has obtained a Patent, which his friends claim covers the use of the sharp edge in frames, (see note C.) I still persist in using such an edge in my hives, without procuring a license under his Patent. From the article of Dr. Hunter it is very evident that neither Clark nor myself were the ***first inventors*** of this sharp edge comb guide, although we ot the time supposed we were. All that we can claim is the combination of the edge with bars or movable frames. Mr. Clark's testimony is that he invented his device some years before I claim to have invented mine; but that he kept the matter secret from all except his near relations. He made his invention, as he admitted to myself and others, accidentally, from obserbing the bees building a small piece of comb in the line of such an edge. In my Journal for February 12, 1853, is the following record:—"Let triangular pieces be fastened to frames, to serve instead of guide combs. These may be an inch on the top or smaller, according as experience shall determine. * * * I feel a strong persuasion that these will dispense with all guide combs, and yet not interfere with fastening on combs." Those who learn that I had been experimenting for a long time to get straight combs without using pieces of worker combs as guides, can easily conceive with what impatience I waited for bees to swarm, and with what delight I found my triangular guides translated out of the airy regions of theory and conjecture into the solid domain of demonstrated facts.

I give another extract from my Journal, June 4, 1853:—"Examined frames in two new swarms, in each comb quite regular without any guides—in one, wax eaten off the edge—think that the new frames" (that is, the frames with triangular edge) "will answer, without any wax or comb as guides." These observations were made in Greenfield, Massachusetts, and that same season a large number of hives were sold, the frames having the triangular guides. Having used this device publicly nearly two years, and demonstrated its success, I applied for a Patent, as above narrated.

Now, neither Mr. Clark nor any of his friends will say that it was possible for me to have borrowed from his device, used secretly and never communicated to any one outside of his family, until more than two years after I had used and sold the same; nor will I even intimate that his application was an after thought, when he saw the success and importance of the invention, for I have no reason to doubt that he was truthful in asserting his prior use of the same. But I do assert most undoubtedly that his Patent on this guide has no validity, and will give the reasons which led to the publication, in the circular of L. L. Langstroth & Son for 1867, of the following:

"As parties are frequently asking information about the right of G. H. Clark to the absolute control of the triangular comb guide, we would caution the public against paying any fees for the use of this device in our frames, as we believe that L. L. Langstroth is clearly entitled to, and will soon obtain, an ***independent*** Patent on its use in movable bars and comb frames. We are so confident that the Clark Patent cannot be sustained, so as to control the comb guides used in the Langstroth frames, that we hereby expressly guarantee all parties purchasing of us under our Patent, against any costs or damages that may be awarded by the courts, if suits are brought against them for using this guide."

It is important to state that Mr. Clark was residing in East Washington, New Hampshire, not over one hundred miles from Greenfield, Massachusetts, my place of residence, where my frames with guides had been ***made, used, and sold, more than two years before he applied for his Patent.*** Repeated decisions of the Supreme Court of the United States show that by his delay he had forfeited all right to obtain a Patent; and that, had the Office known the facts, they would never have issued it. I do not question that he was entirely ignorant of this fatal defect, and that had he known it, he would have made no appication. Justice to myself and to the bee-keeping public, who are constantly asked by parties who have purchased Clark's Patent, to pay for the guide in my hive, and on other hives, compels me to make these facts known.

I shall close this article by a few extracts from the decisions of the United States Courts, which make it perfectly plain that Clark's Patent has no validity. These extracts are all taken from Law's well known "***Digest of American Cases relating to Patents for Inventions,***" &c., published by Baker, Voorhees, & Co., New York, 1866.

"No matter by what means an Invention may be communicated to the public before a Patent is obtained, any acquiescence to the public use, by the inventor, will be an abandonment of his right. If the right were asserted by him who fraudulently obtained it, perhaps no lapse of time could give it validity. But the public stand in an entirely different relation to the inventor." Shaw *vs.* Cooper, 7 Peters, 320, McClean J., Sup. Ct., 1833.

"A strict construction of the act, as regards the public use of an invention, before it is patented, is not only required by its letter and spirit, but also by sound policy. The doctrine of presumed acquiescence, where the public use is known, or might be known, to the inventor, is the only safe rule which can be adopted on this subject," *Ibid.*, 321, 322.

"The question of abandonment does not turn upon the intention of the inventor. Whatever may be his intention, if he suffers his invention to go into public use, through any means whatever, without an immediate assertion of his right, he is not entitled to a Patent; nor will a Patent obtained under such circumstances protect his right." *Ibid.*, B., 23.

"S. made an invention in 1854, but did not make an application for a Patent until September, 1858. L. invented the same in January, 1858, and made application for a Patent therefor in August, 1858, and had manufactured the articles and put them in market. An interference was declared between such applicants. *Held*, that S. had forfeited his right to a Patent." Saverey *vs.* Louth, MS., (App. Cas.) Morsell J., D. C., 1859.

"There can be no doubt that where a party has made an invention and buried the secret in his own bosom, he may, after a lapse of years, come forward, and upon making a secret known by an application for a patent, obtain a monopoly." Bey *vs.* Thistle, MS., (App. Cas.) Merricks J., D. C., 1860.

"But if in the meantime another has made the same invention, and has obtained a Patent, and the public has thereby become possessed of the discovery, when the first inventor applies he will be met with the inquiry whether he has used due dilligence in communicating his discovery. In such case the first inventor forfeits his claim." *Ibid.*

These and other decisions to the same effect, which can be given if necessary, clearly show that Mr. Clarke's Patent has no validity whatever—in law—and that he has not the slightest claim in equity to step in and attempt to prohibit an original inventor, who had used and sold his invention more than two years before Clark applied for a Patent, from using his own independent invention.

L. L. LANGSTROTH.

OXFORD, OHIO.

NOTES.

A. I have since 1851 kept a Journal in which are minutely recorded my experiments, observations, thoughts, and devices, pertaining to bee-matters, by which I can show the date of my inventions and discoveries.

B. Mr. Clark's guide is a large triangle. I find that such a triangle gives a much less firm support for the combs than one only $\frac{1}{4}$ of an inch. Mr. Clark used hollow, tubular winter passages, at right-angles to his bars, so that the combs were not movable at will.

C. I have never been willing to admit that Clark's claim to these guides on bars covers my use of them in movable frames. His original application very clearly shows that he intended to claim them only in his saw kerf combination.

[For the American Bee Journal.]

Novice.

DEAR BEE JOURNAL: We take the liberty, in consequence of our present location at the exact time, 9 o'clock P. M., Nov. 8, 1869, of summoning the Editor and all the readers of the BEE JOURNAL, *en masse*, to examine our new Bee House, just completed, in which we are very comfortably ensconced, now writing. In fact, if the bees find it *half* as comfortable, they certainly ought not to complain.

It is a cold, snowy, freezing night outside; yet we are in our shirt sleeves, and with the aid of only a very small fire in a "wee bit" of a stove, we have the most even summer temperature; not confined air like that of so many rooms. Neither have we any chilling sensation from the walls and corners, so suggestive of coughs and colds at this time of the year, but a quiet stream of fresh though not cold air from our ventilating arrangement to be presently described. In fact our "better half" is rather more than "half" disposed to dispute possession of it with the bees and appropriate it for herself and the children, through the coming winter, as being far more pleasant and comfortable than any room in our dwelling house. The children already find it an admirable play-room, as the walls and even floor are so clean and warm, they can lie down at pleasure, with no fear of the before-mentioned colds, and the ventilator in the floor furnishes a rare place for sport with windmills and experiments in pneumatics.

Now, if you are all listening, we will tell you how we built it, and what it cost.

To commence at the bottom, we had a stone foundation laid, 10 by 14 feet, with two rows of brick on top, with holes in the opposite sides of the wall, by omitting two bricks, to admit air under the house for ventilation. Sills 6 by 10 inches, studding $1\frac{1}{2}$ by 10 inches, eight feet long, set one foot apart, plates 2 by 6 inches, rafters 2 by 3 inches, sleepers $1\frac{1}{2}$ by 10 inches; these were raised on blocks, sills and all, high enough for a man to go under to nail boards on the under side, to hold the sawdust under the floor, and then let carefully down on the walls.

Best quality of pine siding for outside, and inside covered completely with inch pine lumber planed and grooved, so as to have a tight wall to hold the ten inches of sawdust, without its sifting through in the way. One window in one end, and a door in the other or rather double doors, and tight shutters for the window; and if necessary, we are going to have a straw cushion to fill in both. As we shall want a stove in it in the spring, after the bees are removed, for "artificial incubation," we had the top ventilator made of galvanized iron, and in dimensions 7 inches in diameter, so that it can be used as a stovepipe when desired. It just comes below the ceiling inside, and at the top is made so as to exclude light, snow, and rain. The lower ventilator is simply a square box, 7 inches across, through the floor, covered with wire cloth to exclude mice, and a nice piece to just fill the top in summer time, when it is not needed.

We have had one rather weak swarm in already, to test our house. We noticed them one quite cold night making a very loud humming, such as weak swarms make when very cold; and in two hours after carrying them in, they were so still that you could *not hear a sound*, unless the hive was struck. Is not that the proper test for the right amount of ventilation—a temperature that the bees should be *perfectly still?* We think we can do it every time, with any one of our hives singly; but it may be more difficult with them all together.

We have had some very cold, freezing weather in October here, and many of our hives brought out more dead bees after it than we really like to see. They had probably strayed out of the cluster, and there were no passages through the combs. The weather has been cold enough for the past three or four weeks, so that we think we should have found no difficulty in keeping our bees cool enough in here; but we dislike to house them before about the middle of this month (November.)

Well, we found in front of one of our heaviest hives (a swarm made artificially entirely, in September), quite a number of dead bees, perhaps half a teacupful, and, worst of all, among them one of our finest, largest, and yellowest queens. The bees were making an unusual fuss, which was in fact what first attracted our attention to them, so that they had evidently just discovered their loss. On opening the hive, we could find no trace of brood in any stage. Did the queen get frozen, like the bees, or was it some disease? And is it common for young queens to die so? She had raised fine workers, and her hive was quite populous. Thus we had to take the queen from the light stock we were experimenting with, which we regret, for two reasons. First, our number is now only forty-six, and we are afraid friend Argo will surely beat us. Second, our stocks are all strong now, and we always want one to experiment with and build up. Some of our best swarms have been made in that way. Could not a small nucleus hive be wintered in a house like this, and so save your reserve queens? Has any one ever tried it?

Mr. Editor, do you know that your compositor and proof reader between them managed to make a great part of our last article all nonsense? Perhaps it was so already, but they made it worse. They made me say "warm *rain*," whereas I wrote "warm *sun*."

We will try again to give our ideas on wintering, so far as experiments and what we have been able to gather from the whole series of volumes of the BEE JOURNAL, and from those having tested the matter largely.

There are two distinct ways of wintering, and they cannot well be combined in any way that we have heard of, if we understand the matter. They are—

Outdoors, on summer stands, and
Indoors, in frost and sun-proof repository.

By the first plan we would give them all the sun possible, to enable them to prepare in succession for each cold snap. And we can see no plan so good as to give them a hive that will warm through quickly. We cannot understand how a hive standing alone, out doors, can be covered or packed to keep out the frost entirely, as they are in a special repository, with the benefit of the warmth from a number in a room together; and if it is attempted at all, the benefit from the sun is necessarily cut off more or less. That bees do winter in that manner is no proof, as they usually winter well where nothing is done, if they have ventilation sufficient.

The object to be gained by having a special repository is, first and foremost, a great saving of honey; and second, a great saving of bees in each hive. When they are wintered out of doors, every cold snap kills off a few; and from the frequency of this, the aggregate in the end amounts to nearly three-fourths of their whole number. Nay, we have known them to build up when not more than a pint of Italians were left with the queen, and it took nearly the whole season to do it. It is easy to see that one full stock of bees in the spring is of far more utility, than many of such as are nearly played out.

How many times has it been discovered or recommended to have the hive enclosed in a large box, or made double with a dead-air space all round? And the reason of failure of such plan has been many times given—that all benefit usually derived from the sun is cut off, which more than counterbalances the protection obtained against frost. Why do not all methods of out-door packing come under the same head—even the one given by Mr. Langstroth, to say nothing of preparing the hives as he advises?

We may be mistaken, but we cannot think that any protection of that kind would be sufficient to allow a bee to go around a comb, or go to any part of the hive for honey, when the mercury is below zero, as they could if housed in a building like ours.

Many have said to us that five inches of sawdust would be plenty; but in a building in which we expect no aid at all from the sun—but all from their own animal heat collectively—we shall find full as much trouble in keeping the effect of the *sun* out (as we tried to tell last month) as in guarding against frost. And even though our room is as dark as midnight, we do not expect our bees to be as quiet as they should be, unless the temperature is kept not higher than 40° or 45°; and when we cannot do that we shall expect to set them out.

Our house has cost us as follows :—

Stones for the wall, delivered	$4 50
Laying same	4 50
Bricks $2 80, mortar $2	4 80
Lumber for frame	29 98
Shingles	8 00
Roof boards	3 60
Siding and ceiling, best quality, inside and outside	40 40
Carpenter 22 days, at $2 25	49 50
7 loads sawdust, $2	14 00
Ventilator, galvanized iron	6 50
Painting	18 00
Eave spouting	5 00
Nails, door fastening, &c	7 35
	$196 13

We may add one week's personal supervision, $24,00, were we not afraid that it would flavor of Horace Greeley's turnips, that cost him $1 12 each; though he thinks that by more careful management, next year, he can raise them for $1 each.

If you find this too tedious, Mr. Editor, or that you have matter of more value on hand, do not let anything of importance be crowded out to make room for NOVICE.

[For the American Bee Journal.]

Honey Emptying Machine.

On page 87 of the AMERICAN BEE JOURNAL, Mr. Thomas C. Hill criticises somebody's description of a honey emptying machine in the February No., and says that when he attempted to make one, he found it would be necessary to bore an inch hole through a three quarter inch stick, and divers other things just as impracticable. He then goes on to give a bill of stock to make one of his own invention, but does not say a word about how to put it together—whether we must bore an inch hole through a three quarter inch stick, or a half inch hole through a quarter inch stick. I think if a man were to undertake to build one from the bill of stock given by Mr. Hill, without any directions as to how to put it together, he would find it an *up-Hill* business.

Come, friend Hill, tell us how to put it together. I am anxious to have a machine, as many of my bees have too much honey to winter well, and I have not empty combs enough to exchange with them. I therefore want a machine to empty some of them. But, for my life I cannot see how to put your machine together. I am somewhat of a mechanic, and have put together many sorts of machinery, but always had some drawing or directions to go by. Consider, it is not an easy task to take twenty-five or thirty pieces of different dimensions and materials, and put them up so as to make a thing like something never seen before. How is it to be turned? You said something about any gearing, or crank, or cord, to turn it with; or is your machine so constructed as to extract the honey without any motion?

H. NESBIT.

CYNTHIANA, KY., Nov. 1869.

[For the American Bee Journal.]

Parthenogenesis in the Honey Bee.

When Herr Dzierzon, the clever German Bee Master and Naturalist, first called attention to this extraordinary doctrine of true parthenogenesis, or production by the queen, without having any intercourse with the male or drone Bee, he raised such a swarm of opponents, in nearly all the Naturalists in Europe, who scouted the very idea of such a production, and raised such a host of objections against such a theory being true, that Dzierzon himself began to doubt the correctness of what he had seen with his own eyes. A number of them set to work to prove the fallacy of such a statement, but every experiment that was properly conducted only confirmed the correctness of Dzierzon's theory, and Professor Theodor Von Siebold (one of the most distinguished German Naturalistss and Physiologists) fully confirmed this doctrine, after a laborious dissecting and microscopical investigation, he discovered a set of voluntary muscles for imparting some of the male element which is stored up in the spermatheca, to every worker egg, during its passage through the common oviduct. He also discovered lively spermatozoids in the semen of the drones, as well as in the contents of an impregnated spermatheca, and detected the same spermatozoids in worker eggs, whilst they were entirely wanting in those eggs that would produce drones.

This long and acrimonious dispute was at last conclusively settled; all honor be to Herr Dzierzon for his laborious observations, as it has explained many of the mysteries of the hive, in which the great King of Bee-Masters, the illustrious Huber, after discussing the effects of retarded impregnation, exclaimed, "It is an abyss wherein I am lost." All other great Bee-masters have been equally lost in this abyss, until Dzierzon discovered the doctrine of true parthenogenesis, and it is now a confirmed fact that the queen has the power at will to lay drone or unfructified eggs, or fertilized worker eggs.

It has been stated by a number of writers on bees, that the queen has to lay worker eggs a certain length of time, and then a quantity of drone eggs. But I have seen the queen in my glass observatory hives lay worker eggs, then a few drone eggs, and immediately worker eggs again, all in a few minutes; and I saw these worker and drone eggs hatched out into perfect bees, which conclusively proves that the queen has the power to fructify the eggs or not, at will.

I always like to confirm or not, all these theories about bees, by my own experiments. So, having received some beautiful Ligurian queens direct from Switzerland, on the 22d day of September, I thought a few days after that it would be a very conclusive confirmation of this wonderful doctrine if I could raise a queen so very late in the season, as every drone had disappeared several weeks before. So, on the 7th day of October I examined the combs in one of the stocks, to which I had joined one of the imported Ligurian queens, on the 23d day of September, and found a very large quantity of eggs laid in three combs. I removed one of the combs, and put it into another stock, from which I removed their queen.

October 18, examined the combs and found five royal cells sealed (11th day.)

October 22, examined the combs about three o'clock, and found one of the queens just ready to leave its cradle (15th day.)

October 23, found four young queens thrown out on the alighting board.

October 26, examined the combs and saw the splendid virgin Ligurian queen.

November 14, again examined all the combs and could not find a single egg laid. I saw the splendid virgin Ligurian queen, now twenty-three days old.

February 24, I found a drone pupa on the alighting board.

February 27, examined all the combs and found drones hatched and brood in all stages of development in two combs, containing only worker cells. I saw drones emerge from these cells. Removed these combs as specimens, also a few of the small drones that were hatched. I put into the hive bar frames containing drone combs. I saw the beautiful virgin queen.

March 6, examined the combs and found eggs and brood in two combs.

March 31, a number of drones flying out.

April 7, examined all the combs and found about one quarter of the bees were drones. I supplied the stock with several worker brood combs, taken out of other stocks, and I saw this virgin queen frequently from April to June, and she continued to lay eggs that produced only drones, not in the order that a fertile queen lays eggs, but here and there one, so that the combs with the sealed drone brood, with its conical covers, had a very singular appearance. She also sometimes laid two eggs in one cell, which, in some cases, came to maturity; the bees enlarging the entrance to the cell to the size of two cells, and thus covering the two larvæ with one large conical cover.

In June I removed this virgin drone-breeding queen, and placed her in my entomoligical collection, and gave the stock a beautiful young Ligurian queen.

There never was a clearer confirmation of this wonderful doctrine of true Parthenogenesis, as I never read or heard of a queen being hatched so late in the season as the 22d of October, and afterwards kept until the June following, producing only drones.

Altogether the experiment was very successful and most interesting, as it was the first time I had ever seen or heard of two bees coming to maturity and being hatched out in the same cell, perfect drones.

William Carr,
Clayton Bridge, Newton Heath, near Manchester, England.

THE Italians call the honey-emptying machine a "*smelatore*" How will that name suit the fastidious who desire brevity?

THE very essence of all profitable beekeeping may be condensed into Oettel's Golden Rule:—Keep your Stocks Strong.

[For the American Bee Journal.]

Product of Honey, Location, and Size of Hives.

When I read friend Hazen's articles about his beehive, I came to the conclusion that he writes under the impression that it is only necessary to give the honey bee a roomy habitation and ample space for storing honey, to obtain in any location from 100 to 300 pounds of surplus honey from a single colony of bees. If this were so, why do we not get up a beehive as large as a good-sized barn? We might then get honey by the thousand and the hundred thousand pounds, without being compelled to oversee and manage a large number of stocks. Other beekeepers, too, seem to write under the conviction that no other hive than one of their own invention, can give us a large amount of honey.

Now, I am a beekeeper of no inconsiderable experience. I am forty-five years old, and, with the exception of one year, when I came to this country, I have kept bees from my seventeenth year, in numbers varying from a single colony to eight hundred. I have kept bees in tall hives and in low ones; in wide ones and in narrow ones; in wooden hives and in straw hives; and in hives with inside measurement varying from 700 to 4,800 cubic inches in the main apartment. I have used hives with only one cap-box for surplus honey, and others with boxes varying in number up to twelve. I experienced what I considered extra good honey seasons, and also some so poor that my stocks had on an average not more than five pounds of honey on the first of November. And I must say that I never obtained so large an amount of surplus honey from one or from many hives, as I notice reported in the Journal by some beekeepers. I often ask myself why is this so? It cannot be on account of the hives I used, as I have used and tried an immense number, of different shapes and sizes. And I conceive it cannot be owing to the management, as I have tried natural swarming and artificial; I have fed the bees with rye flour and honey in early spring up to the time when they could gather supplies for themselves. I had them populous enough to turn off strong swarms in May. I have placed swarms in empty hives, and in hives filled with combs; in tall hives, as well as in shallow ones. I put on surplus honey boxes before swarming and after swarming. I put boxes on large prime swarms immediately after hiving them, or soon afterwards; but, with the exception of about a dozen cases, I obtained no greater yield of surplus honey than twenty-five pounds from any single hive, or an average of about fifteen pounds each, from the whole number; and this yield was secured in a few seasons only, and since I keep the Italian bees.

Is it not a shame for me to acknowledge such results as these? Would it not better advance my interest, as a dealer in bees, to get up a statement of an immense yield of honey secured by Italian bees, native-bred or imported? Some of my beekeeping friends will be ready to exclaim—"I know where the trouble is with you. You keep too many stocks in one place." And is this a satisfactory explanation of my failure to obtain a large amount of surplus honey? I am constrained to say No!

When I commenced beekeeping in this country, I had only one colony, which doubled itself the first summer, but gave me no honey. In ten seasons, during which my stocks had, by natural and by forced swarming, increased to fifty-three, I obtained surplus honey from hives and caps only in two seasons. My swarms then were kept in standing hives of from 2,000 to 2,600 cubic inches contents, with caps for surplus honey; and they were always wintered on their summer stands. In some of those seasons, even good, strong, early swarms did not do more than gather a winter's supply; and second swarms I was able to winter only in one season. Some beekeeping friend will now be ready to ask—"Had your beekeeping neighbors no better success the while?" And the reply is—"they fared neither better nor worse." Not one of them was able to increase the number of his stocks to equal mine, though they seemed to be equally ambitious. All of them, except one, have now abandoned beekeeping, and that one has only two stocks left. A few other stocks, kept six miles from me in an easterly direction, have not given any surplus honey for a number of seasons, and have not increased in number.

It is different, however, only three miles off, south, west, or north, from the location of my home apiary. There bees are yielding some surplus honey, even in common seasons; and a few who keep their stocks in cellars over winter, are doing quite well. At the distance of only three miles the weather cannot be much different; and the question presents itself, why do bees do so much better there? It doubtless is not because of their management, as they are nearly all kept in common box hives and left to natural swarming, without any more interference than hiving the swarms and putting on boxes. The bees find about the same kinds and quantity of flowers in both quarters; but the yield of honey must be very different. In twenty-one years, the bees in my home apiary have not gathered a pound of white clover honey; nor, with the exception of one season, have they stored any in boxes from buckwheat; while some of my neighbors, three or four miles off, have had white clover and buckwheat honey stored in most seasons. I saw four acres of buckwheat for three seasons, within a quarter of a mile of my apiary; but noticed the bees at work on the blossoms only about two days in a season. During white clover and buckwheat time, my bees are as busy as they can be. They gather large amounts of pollen, and rear great quantities of brood, but do not seem to increase in number or in weight. When compelled to go three or four miles in quest of pasturage, they doubtless lose a large number of workers, and use all the honey they gather in sustaining the brood.

Now, what is the cause of the difference in locations? It doubtless arises from the difference in the soil, that induces a poorer or a more plentiful secretion of honey in the plants or flowers growing in each. No amount of room in a hive or in surplus honey boxes, will make a difference of more than a few pounds in the yield of honey by any one hive. On the contrary, I have for the last six years obtained all my surplus honey from hives that have not over 1,700 cubic inches room inside the eight frames they contain, the spaces between the combs counted in;—and from hives considerably smaller than these.

A hive containing 4,800 cubic inches, has not given me more than one natural swarm and two forced ones in six seasons, and not a pound of surplus honey, either from the hive or in caps. From hives with eleven Langstroth frames I scarcely ever get any surplus box honey; and in most seasons the bees do not fill those hives with combs before they swarm. Under such circumstances, would it be advisable to procure those hives with the large amount of room for surplus honey, which friend Hazen recommends? Or will hives that in every ordinary season contain honey enough to winter a swarm on, be large enough? For my part, I came to the conclusion some years ago that the hive with eight Langstroth frames only, with room for six 5-℔ surplus honey boxes, are large enough for my location. I am of opinion that it is the duty of every beekeeper to find out what honey resources he has in his location, and get up a hive proportioned in size to the yield of honey, and which will contain honey enough to keep his bees in good condition at all times. That a queen bee will lay as many eggs in a large hive in a poor season as in a good one, is something that is contradicted by experience, at least in my location. With me large hives have proved unprofitable, both as regards swarming and as yielding surplus honey. Experience and observation have not, with me, proved that 30.000 worker bees will store up nine pounds of honey, while 10,000 will not store more than one. To my knowledge, I have not yet seen it stated that a queen ever has laid or would lay three thousand eggs, or even two thousand, per day for thirty consecutive days. If a queen, in some few instances, was coaxed to lay nearly three thousand eggs per day, it does not follow that she will do so for a month or a season. My advice to beekeepers, therefore, would be—study the honey resources of your location, and get up a hive adapted to them.

A. GRIMM.

JEFFERSON, WIS., Nov. 1869.

[For the American Bee Journal.]

Worker Bees in Drone Cells.

Mr. J. M. Marvin, in the BEE JOURNAL for January, 1869, page 140, tells us that bees put in a hive containing drone comb exclusively, changed the cells to the size of worker cells, by making them funnel-shaped inside, in order to raise workers.

In the October number, page 82, Mr. H. Alley reports the same experience; but does not say whether the bees narrowed the cells, as in the Marvin experience.

In so uncommon a case, an account of all attending circumstances will be welcomed by beekeepers, as these may throw some light on the determination of sex in the eggs of bees.

. CHARLES DADARTr

HAMILTON, ILLS., Nov. 4, 1869.

[For the American Bee Journal.]

Extra Profits of a Hive ef Bees.

NUMBER 1.

Large profits of a hive of bees, belonging to a man in the dairy region of Kane county, Illinois. Increase of stocks, ten; making eleven, counting the old hive, yielding twenty-five pounds of box honey, and leaving enough in the hives to winter the entire stocks. Six hives of empty combs were used in making the new swarms. This experiment by a beekeeper having only twelve months' experience, shows partly the value of empty combs. What will mechanics, arts, and science do, when beekeepers cease the sale of wax? It is worth at least quadruple as much to the beekeeper as he gets for it after the combs are melted into wax; that is, if he has or will acquire the knowledge of using comb properly.

Value of stock hive	$25 00
Cost of 10 hives, for swarms, $3	30 00
One set of boxes	30
Value of set of empty combs, if melted in wax, 6 ℔ @ 40 cts	2 40
Feed in spring, 30 ℔ sugar @ 20 cts	4 00
Time in management, 40 half-hours, or 2 days @ $3	6 00
	$67 70

VALUE OF PRESENT STOCK.

11 hives of bees, $20	$220 00
25 ℔ surplus honey, @ 30 cts	7 50
	$227 50

Balance, or profit, one hundred and fifty-nine dollars and eighty cents, ($159 80).

NUMBER 2.

A hive of bees sent to Minnesota has increased to fifty-four in three years, besides one sold the first year and eight lost the second winter by trying to winter them on their summer stands. The yield of honey should have been and probably was large, as frequently there was too much of it in the hives for the bees to do extra well. This is doing well for a beginner, and a woman; and shows the value of the AMERICAN BEE JOURNAL that gives the knowledge to get large profits.

NUMBER 3.

A hive of bees sent to Chicago, increased to four; and gave forty pounds of box honey as surplus. They were managed by a new beginner.

EXTRA YIELD OF HONEY.

Amount of honey taken from one stock hive in an apiary of one hundred increased to two hundred :

Extracted with a machine	190 ℔.
Box honey	60 ℔.
	250 ℔.

The one hundred original stocks and one hundred increase gave 3,000 ℔ of honey extracted by machine, and 3,000 ℔ box honey as surplus—total, six thousand (6,000) pounds.

NUMBER 4.

A hive of bees sent last spring to Cook county, Illinois, increased two. The old one and two new ones gave fifty pounds extracted honey as surplus.

A HINT WORTH KNOWING.

Use pure beeswax in preparing for service all wooden ware that is used in the dairy, and all pails for drinking water. Put in a lump, then use a hot iron to melt the wax and drive it in the pores of the wood. Thus your milk pails, butter bowls, churns, and water pails will be kept from absorbing moisture or impurities.

PROFITS OF BUCKWHEAT.

The bees in our farm apiary, in the vicinity of buckwheat fields, have done better than those at our home apiary. Twenty-two stocks increased to forty-six; and gave seven hundred and fifty pounds extracted honey and one thousand and sixty-four pounds of box honey—total eighteen hundred and fourteen (1814) pounds.

J. M. MARVIN.

ST. CHARLES, ILLS.

[For the American Bee Journal.]

Blossoming of Trees and Plants at Carthage, Indiana, in 1869.

Soft maple, February 12; red elm, April 2; willow, April 3; water elm, April 4; lombardy poplar, April 5; ground ivy, April 16; sugar maple, April 23; peach, April 23; pear, April 25; gooseberry, April 27; red currants, April 28; buckeye, April 29; apple, May 2; tulip poplar, May 28; linden or basswood, June 30.

The above constitute most of our bee trees and plants. The date of the blossoming of white and red clover, I neglected to note. My Italian bees worked freely on the second crop of red clover. Not much buckwheat is seen in this county.

My first swarm issued May 15; my last one August 18.

I have my hives so arranged that I can remove my bees from one honey location to another, in the hottest weather. I move them on spring wagons. I removed twenty-five hives of my bees twenty miles, to a poplar grove, on the 26th of May, and brought them back on the 26th of July. I obtained a little over twelve hundred pounds of liquid honey from them during that time.

P. W. McFATRIDGE.

CARTHAGE, IND.

[For the American Bee Journal.]

Letter from Iowa.

Mr. Editor:—I suggest that your correspondents who keep bees give, through the "Bee Journal," their modes of artificial swarming, and how they keep their combs straight; in fact let us have their entire management of bees. Also, how they pack honey for shipment to market; where they sell it; the prices obtained; the present and the prospective demand. There are but few beekeepers that would not receive some benefit from such communications, if honestly and faithfully written. Let us have the facts—no theories.

I came through the winter with fifteen stocks. Eight of the best were selected for the collection of honey. The spring being so very wet made me afraid to divide the whole. Two of the eight swarmed, and the swarms went off into the woods. I had taken five frames of brood and honey from one of these stocks, and two frames of brood and about half a gallon of young bees from the other.

My Langstroth hives are fitted for two sets of boxes, the American for same box, and other small frames for surplus. Two of the Langstroths gave me fifty-six (56) 5-pound boxes gross. One of the eight failed to give me a swarm or any surplus, through some accident to the queen. I have now twenty-nine stocks. The amount of surplus honey was eleven hundred (1100) pounds box honey, except four gallons of strained honey. These results are quite satisfactory, if I could only sell the honey at a reasonable price. All I have sold as yet has been for twenty cents a pound in store goods.

My favorite mode of dividing is, to take the parent stock and place it two or three feet on one side of the old stand; get an empty hive with all the frames in place except one; open the parent stock, take out a frame of brood with the adhering bees, *paying no attention to the queen*, and place it in the empty hive; then lift out the frames one at a time, shake off the bees in front of your new hive, replace the honey board, and the division is made. If the old hive gets too many bees, move it a little further off, and *vice versa*.

Another way is to hunt out the queen and return her to the parent stock. The old bees, not finding their queen will return to their old stand. The young bees will remain and raise queens better than the old ones. When making swarms in this way, the old stock must be put on the old stand. The "nucleus" can be put anywhere you choose. When the young queen becomes fertilized, give frames of capped brood. If made at the proper time, the parent hive will hardly miss what is taken from them. More anon, if this suits.

Frederick Crathorne.

Bethlehem, Iowa.

The common locust and the honey locust are very desirable trees for the vicinity of an apiary, yielding much honey at a time when peculiarly valuable to the bees.

[For the American Bee Journal.]

Burying Bees.

Some years ago a friend informed me that he had kept bees in Massachusetts, and the better to winter some young swarms that were short of honey, he had buried them. He said he always selected those that he judged would not winter in the common way. He had buried some at different times, he judged as many as twenty stocks in all, and never lost any by so doing. They always did well.

Following his instructions, I that winter buried two weak colonies in a coarse sand bank. I put them beneath the frost, gave them no ventilation, and filled the gravel in against and on top of the hives. Some space was left beneath the hives, to secure them against damage by water. The bees were put in on the 18th of December, and taken out on the 14th of April following—being as early as the ground thawed over them. The combs were not badly molded, and there were only about a dozen dead bees on each bottom board, which I presume were there when the hives were put in. Those bees did well the next summer.

Last fall I buried four hives in the same way, except that I put them in fine compact sand. Two of these hives were well filled. They all molded pretty bad; the two full ones were lost as a consequence, and besides, the bees of the other hives died as much as others wintered on their stands. Both the stocks that survived did very well for the season this summer.

As the honey season here has been very poor, and I have a number of young swarms that have but little honey, I have resolved to bury ten of them in a gravel bank, but shall give them ventilation this time. I mean to put them in just before winter sets in.

I use the Colton hive. Movable comb hives and Italian bees are scarce here.

The fact that bees can be wintered well a number of feet under ground, without ventilation, and with the ground frozen over them, is (with me) good evidence that bees need but little air in winter.

Alonzo Barnard.

Bangor, Me., Nov. 5, 1869.

[For the American Bee Journal.]

Borage Seed Wanted.

We frequently find, in reading works on bees, that *Borage* is highly recommended as a bee pasturage.

Why do not some of those who cultivate this plant advertise the seed for sale through the columns of the Bee Journal, as they do their Alsike clover seed?

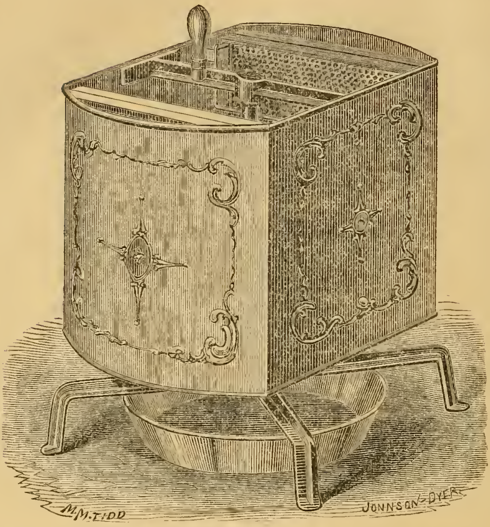
We feel confident that any one so doing would be well repaid, as, in some sections, it is impossible to find this seed, though we have heard it inquired for times without number.

L.

December, 1869.

[For the American Bee Journal.]

Peabody's Honey Extractor.



The above engraving is a perspective view of a new honey extractor, which has been practically tested during the past season, and is now ready to be introduced to the beekeeping public.

The machine consists of a tin case, in shape somewhat resembling a common wash boiler, adapted to receive honey frames of any size, across either end, and is made to revolve upon a central stationary spindle, set in the cast iron base.

The bottom of the case is made sloping towards the centre, and has a metal casting of peculiar form soldered into the centre of the same, through the centre of which passes the spindle on which the case revolves, and in which are also formed outlet passages, through which the honey is discharged.

A cast iron bar is securely attached to the top of the case, extending across the same from side to side, in the centre of which is formed the upper bearing of the spindle, and which is also inserted the handle by which the case is revolved.

A frame of wood, resembling a common honey frame, and covered on one side with wire gauze, is suspended across either end of the case, upon brackets provided for the purpose, with the wire gauze towards the centre, and a frame of honey is suspended by the side of it with one face of the comb resting against it, in the usual manner.

When the case and contents are set in motion by means of the handle, the honey will be discharged into the space between the wire gauze and the curved end of the case, and when the rotary motion ceases the honey will flow to the centre of the bottom of the case, and through the openings in the central casting, and through similar openings in the hub of the cast iron base, and be delivered into the pan seen in the cut.

This machine was invented by H. O. Peabody, of Boston, Massachusetts, brother of the undersigned, and patented October 26th, 1869.

For further information, send stamps for circulars to

J. L. PEABODY,
Virden, Macoupin County,
Illinois.

BEE THIEVES ABOUT.—Mr. Geo. H. Knight, who resides on Front street, near Columbia, takes a great interest in raising bees. He has a large number of hives; but every now and then some rascally person steals one. Last night Mr. Knight's premises were visited by thieves, who killed all the bees in one hive by introducing chloroform into it. They then carried off about twenty-five pounds of honey.—*Newport, Ky., paper.*

THE blossoms of onions abound in honey, the odor of which is, however, offensive when first gathered, but with the lapse of time this gradually disappears.

Care should be taken to shelter hives from piercing winds during winter.

For the American Bee Journal.

Conklin's Diamond Hive.

Dr. Conklin having patented the hive invented and made public property by my surrendering my rights of invention, I submit the following statement of facts:

I made the invention public property on or about the 1st of March, 1868. The description and drawing were made on the 22d of February. I was then going to make a claim for a patent; but on consideration I concluded to abandon the invention to the public, which I did on the 1st of March, by sending description and drawing to the "*American Agriculturist*," New York, AMERICAN BEE JOURNAL, Washington, and *Western Rural*, Chicago.

The following letter was received, in reply, from the office of the *American Agriculturist:*

OFFICE OF AMERICAN AGRICULTURIST,
No. 41 PARK ROW,
NEW YORK, 9th March, 1868.

To John M. Price, Buffalo Grove, Iowa:

DEAR SIR: The letter to Mr. Judd was put into my hands on the 7th inst. I fear now that it will be hardly possible for us to use the description of your hive sent for the May number.

You may or may not be aware that there is another hive, almost exactly on the same principle as yours, patented. The man had his model in our office only a few months ago, and I understood then it was patented. It may be that this is the same hive. Will you have the goodness to let me know when the hive was invented; when first used; if it infringes any patent you know of.

The plan struck me as an admirable one; but I should think it would be worthless as a movable frame hive, unless it employed Langstroth's patent.

If you answer so that we can get your letter by the 17th, it will be in time for the May number.

Very respectfully,
MASON C. WELLS,
Agricultural Editor, for O. Judd & Co.

OFFICE AMERICAN AGRICULTURIST,
No. 41 PARK ROW,
NEW YORK, 3d April, 1868.

To John M. Price, Buffalo Grove, Iowa:

DEAR SIR: The name of the man who has patented a beehive similar in principle, as I view it, to the one you send,* which was duly received, is *Bingham*. I *cannot* give you his first name. However, if you write to Mr. Bingham, owner of Bingham's Patent Bee Hive, Cassadaga, Chautauque Co., N. Y., you will probably hear from him. Ask him for a circular, send a few cents in postage, and say you heard about his invention through a friend.
MASON C. WELLS.

I also sent a description and drawing to Mr. E. Gallup, of Osage, Iowa, which he mentions on page 30 of the August number of the AMERICAN BEE JOURNAL, 1868, article on Bee Feeding.

In April, Mr. James Cotant made and used two of these hives, at Buffalo Grove, Iowa.

In May Mr. Charles Jackway had in use two of them at Buffalo Grove, Iowa.

In May, Mr. F. M. Hunt, of Independence, Iowa, had in use one of them.

I had in use thirty-two of them, by, I think, the first of June.

In August I received the following letter from Mr. Samuel Wagner, in reply to one of mine.

WASHINGTON, D. C., July 31, 1868.

John M. Price, Esq.:

DEAR SIR: I deferred noticing your description of your hive, as it requires a wood-cut for illustration, and we have no wood engraver here now. The cuts for the Mechanical Report of the Patent Office are engraved at Buffalo, N. Y. If I cannot procure a cut, I will still endeavor to use your description at an early day.

Yours truly,
SAMUEL WAGNER.

On receiving the above letter, I made a working model and sent him a better description and drawing, which he mentions in the following letter:

WASHINGTON, D. C., September 26, 1868.

J. M. Price, Esq.:

DEAR SIR: I duly received, per express, the model of your hive, and am much pleased with its arrangement, though it is of course not possible to judge properly of its adaptedness and value, except on actual trial. The drawing and description came to hand likewise. I had a reduced copy of the former made, and expected to have a cut engraved in season for the October number of the BEE JOURNAL, but regret to say it it could not be finished in time for the printer, so that it will have to be delayed a month longer.

Yours truly,
SAMUEL WAGNER.

All of the above correspondence took place before the 1st of October, 1868, and on the 20th of October, 1868, a patent was issued to Dr. A. V. Conklin for his Diamond Frame Hive. See his "claims."

The one hundred or more readers and subscribers of the BEE JOURNAL, who have written to me, expressing their desire to use the hive, can see by the above correspondence their perfect right to do so, subject only to Mr. Langstroth's claims on the principle.

J. M. PRICE.

BUFFALO GROVE, IOWA.

For the American Bee Journal.

The Rectangular Frame.—Rejoinder.

MR. EDITOR:—(I cannot help feeling sorry for Mr. Editor, who has to hear everybody's attacks and everybody's defence; but, as Mr. Editor really means all his readers, I say Mr. Editor too.) In the November number of the BEE JOURNAL, Mr. Miller, of Peninsula, Ohio, directs his *battery* against the Rectangular Frame Hive and myself. In courtesy to him I answer his request. First, let me say to Mr. Miller, it is too late in the day to make that kind of attack on the rectangular frame hive as I have them, as they are too widely circulated and too many of them are in use to do it any injury. Since reading your article I have examined hundreds of the "Diamond Frame Hives" in this section that were filled the past season, and here is the certificate of the owners, "since you doubt my statement."

"Dr. Conklin showed us Mr. Miller's attack of him and his *Diamond Frame hive.* He then opened our hives and removed all the frames (some of them had not been opened since the bees were put in them), without cutting or breaking a single comb. We have handled the Langstroth, American, and several other frame hives, but never saw a hive that the combs were always so straight in the frames. Mr. Miller's attack does not apply to Dr. Conklin's Diamond Frame Hive. He then took us to his apiary, and opened forty of his hives. Each comb was built straight in the frame.

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* I answered his first letter, and sent him a working model, which is duly acknowledged in this letter of April 3.

(Signed) H. L. Osborn,
B. Wood, P. M.
Jesse Harkness,
G. J. Wood, Justice of Peace,
Aaron Benedict, Italian queen breeder,
Bennington, Ohio.

"I take stock in the Diamond Frame Hive. The combs are all straight in the frames."

(Signed) A. J. Cook,
Agricultural College,
Lansing, Mich."

Now, Mr. Miller, my bees, as well as the bees of all the above-named parties, with many others, "*know their duty to their owners and will do it just so well*," in the Diamond Frame Hive, which you or anybody else can purchase for a reasonable compensation. Or you can "get the secret of training them" in the Diamond Frame Hive with the same results, if you possess "compos mentis" enough to set your own hive level. The hives you made, or the bees in them, must have been very inferior and should have been destroyed, instead of selling them to the beekeepers of the old school, since the people have been kept in doubt and darkness long enough by the "would-be knowing ones." Let us have "more light" approaching from the East," and more "substitute" returning from the West, in compensation for the Journal. So hurrah for the Bee Journal, and the one that can obtain the most bees and honey, in the best hive, during the season of 1870.

A. V. Conklin.
Bennington, Ohio.

For the American Bee Jonrnal.

Bees in J. M. Price's Square Frame Double-Cased Bee Hive.

Mr. M. Miller, of Peninsula, Ohio, having given in his experience with bees in square frames hung angling, I have only to say that what he says on page 99, No. 5, vol. 5, of the American Bee Journal, is *absolutely true*, and will be so *invariably* in any hive made as his or Dr. Conklin's Diamond hive is. But if Mr. Miller will make a hive like mine, with its two movable sides or division boards, (No. 20, of description), and then read Mr. Gallup's article "How to Ventilate," on page 8, vol. 4, of the American Bee Journal, he will get a good idea of my management to get straight combs; the *rule*, not the *exception—straight combs every time; impossible to be otherwise.* I generally start a swarm with two full frames of comb and brood, and three empty frames, placed alternately, with a division board placed close to each of the outside empty frames; thus forming a tight hive of five frames' capacity. When the bees have filled the three empty frames, I move the division boards out towards the outside and put in two more empty frames; and repeat until the hive is full of frames. By having every alternate frame only empty, the bees cannot do otherwise than make the comb straight.

My hive, as described in the Bee Journal is free to all, to make and use, who have paid Mr. Langstroth for a right to use his principle in bee hives, as I have done. I have in use both forms of hive, his and mine, and I think mine, made according to description, is a little ahead of any other hive, except my own last invention—my Movable Casket Bee Hive. For ease of management—stimulating the queen in early spring, for the early production of brood; or to stimulate the queen to keep up the production of brood during a temporary drouth in the summer; and for the more effectually wintering bees in any climate, I believe my Casket Hive is without an equal. All who have seen it, pronounce it perfection reached.

John M. Price.
Buffalo Grove, Iowa.

For the American Bee Journal.

Shallow Langstroth Hives.

I began beekeeping with "box hives," but soon found that, in order to have control of my bees, they must be in movable comb hives.

As the Langstroth hive was the only movable comb hive used to any extent in this section, I procured the right to use it, and have used it with great success.

My hives are mostly of the shallow form, being 8½ inches deep inside of the frames, or 10 inches including space above and below the frames.

I have taken nearly double the amount of surplus honey from my hives of the above depth the past season, that I have from other hives that were 14 inches deep and upwards and contained equally prolific queens with a similar amount of bees in the spring and did nor swarm. The bees worked more diligently in the shallow hives than in the deep ones.

My experience thus far teaches me that I can obtain more honey from a hive of the first named depth, than I can from one of greater depth of frame, if the frames hang square in the hive and the surplus boxes are placed above the frames. But as for bees wintering in such hives on their summer stands, in northern districts, as well as they will in a more compact form of hive, such as Mr. Alley's form of the Langstroth hive, or Mr. J. M. Price's double cased hive, I do not think they will.

To winter bees with good success, on their summer stands, in the northern districts, it is necessary that the heft of the honey should be directly above the cluster of bees, and the two hives named above greatly facilitate that object.

I am in favor of Mr. Greene's suggestion. So here goes. I, George M. D. Ruggles, twenty-four years old, was born in Washington county, Vermont; lived ten years in New York, and have resided nine years in Hartland, Vermont; am a farmer, and keep bees. The enclosed needful will enable the Editor to take the hint, and continue to send the Journal to my address.

George M. D. Ruggles.
Hartland, Vt., Dec. 14, 1869.

For the American Bee Journal.

J. W. G.'s Five Questions Answered.

1. In counting the "three yellow bands" on full-blooded Italian bees, is the narrow strip next to the thorax included, or should they have three *besides* that?

The Italian bee bred in Italy has generally but two yellow bands, and including the narrow strip next the thorax, three. But Dzierzon has raised a much more beautiful race. The workers of his full-blooded bees have three yellow bands, *exclusive* of the narrow strip.

2. What should be done with a good colony containing a fertile worker? Could an unimpregnated queen, or a fertilized one be successfully introduced?

A *good* colony has no fertile workers, and as soon as such make their appearance the colony must be regarded as diseased. Colonies without queen and with fertile workers, behave variously. Some accept introduced queens, and some do not. In any case a fertilized queen will be more easily received.

3. Will bees with fertile workers build drone or worker comb?

Such colonies generally do not build at all; but when they do, they build drone comb, with very rare exceptions.

4. What is the greatest age at which a queen can be or is fertilized.

Generally it may be said that she is able to be fertilized so long as she continues to fly out. In Germany there are unquestionable cases on record, where queens which were forty days and more old, still became fertilized.

5. What is the average number of times a good bee-keeper will "go into" (open and examine) his hives in the course of a season?

This question is not to be definitely answered, for the opening of hives depends on circumstances; and the special purposes of the bee-keeper. For instance, if he is desirous of multiplying stock, he opens his hives more frequently than when he simply wishes to obtain much honey.

LINA BARONESS VON BERLEPSCH.

MUNICH, Nov. 20, 1869.

For the American Bee Journal.

Bee Feed.

I have used the following for a number of years: About one quart of water, two teaspoonsful of starch, made the same as ladies prepare it for starching clothes. When boiling, add five pounds of white sugar; stir it until it boils again; take it off the fire, and add as much honey as you can spare.

JOHN WINFIELD.

CANFIELD, OHIO.

For the American Bee Journal.

Querist's Question, No. 7, Answered.

MR. EDITOR:—I beg leave to answer one of Querist's questions on page 83 of the BEE JOURNAL. He says that I guarantee all the Italian queens I sell, and if any fail to produce workers with *three* yellow bands, that I will replace them free of charge. So I do, and will.

My reason for saying this, is—I have often had queens of my own rearing, and some I have *bought* and paid *high* prices for, that produced workers with three stripes for some months, and then failed to produce *all three* striped workers, as occasionally there would be a *two* striped fellow. Such queens I consider *not* pure. As my customers are generally in a *great hurry* to get their queens, I, like many others, and perhaps all queen raisers, send queens to those that are in such a *hurry*, after the worker progeny of the queen has been hatching a week or ten days; and if *all* have the three yellow stripes, they are considered pure and sent off to the customer, and in case they are purely fertilized, are pure. But, as it is evident that the queens often mate with two or more drones, their progeny may all show the marks of purity for a time, and afterwards show the *mixed* blood, as one of the drones may have been of the black race.

Querist asks are three yellow bands a proper test? That is considered a proper test by the best apiarians, both in America and in Europe. So what further test does Querist want?

Querist says, suppose I was to raise a hundred Italian queens, and should produce workers thus marked, how many of those queens would I be willing to use for *queen breeding* purposes? Well, sir, I would give them *all* a thorough trial (provided I needed so many to breed from), and if all continued to produce workers with the three yellow stripes for some months, and no variation, I would be willing to breed from all the hundred.

I think bees, like all other stock—sheep, cattle, &c—are susceptible of improvement, though they are thorough blood; and to improve my bees, I would select such queens as produce workers most *quiet to handle* and most prolific, and produced young *queens* that were all like their mother in color, or lighter.

Querist seems to take exception to me and some others, for selling queens at *knock-down* prices, by the quantity. I explained in my circular the reason why I could afford to sell queens so cheap *this* season. It was because all the black bees had died last winter for some miles around me, and of course I had no trouble in getting my queens impregnated by my own drones. Don't grumble, Mr. Querist, I will not sell any more queens so cheap, as some black bees have emigrated from parts unknown, and located in the woods around me; and I will charge higher prices next season, just in proportion to the trouble I have in raising them.

I hope to have my queens all fertilized, next season, by the drones I may select, by the new process which I suppose will soon be published.

I should have written this for the November number of the JOURNAL, but did not get my October number number till yesterday. So do not think I am asleep, Mr. Querist, but like yourself, I read every article in the BEE JOURNAL with care, and then lay them away to have them bound, as I have the first four volumes in two books; and when I have nothing else to read, I often re-read many articles in them, with much interest. Hoping this will satisfy friend Querist, I am, yours truly,

H. NESBIT.

CYNTHIANA, KY., Nov. 7, 1869.

For the American Bee Journal.

Natural Swarms.

I clip the wings of all my queens as soon as they commence laying; then, when a natural swarm issues, the queen falls to the ground. I seek for her carefully, and as soon as most of the swarm is out, I move the hive away ten or fifteen feet, and set an empty hive with frames all in proper position in the place where the hive that has swarmed stood. I keep the queen till the swarm begins to return, which it always will do when the queen is not with it, even if it has meantime alighted and clustered. In a little while back they *will* come. Now place the queen on the alighting board, and watch her till bees enough come back to induce her to enter the hive, and all is right.

Then take a fertile reserve queen, cage her and put her between two of the brood combs in the old hive from which the swarm issued, after removing or destroying all the queen cells. Keep her caged two or three days, then release her, and the work is done. Egg-laying, in the old hive, is stopped only three or four days, and in a little while the old hive will again be strong in bees. This season, nine treated in this manner nearly all swarmed again, sending off good strong swarms.

P. W. MCFATRIDGE.

CARTHAGE, IND.

For the American Bee Journal.

Profits of Beekeeping.

From seven full swarms (ten frames of comb each) wintered through last winter, I have obtoained seven hundred (700) pounds surplus honey, and have on hand twenty-five swarms of bees. I used the revolving honey-emptier, and had no honey stored in boxes. Whole amount of full frames of combs and honey on hand 350 pounds, making an increase of four-fold.

18 new swarms, @ $10 each..........................	$180
700 ℔ honey, @ 25 cts. ℔ pound...............	175
Total..	$355

Which is $50 on each of the seven swarms. They were mostly hybrid Italians.

J. L. PEABODY.

VIRDEN, ILLS.

For the American Bee Journal.

Experimenting.

On the 10th of July, 1868, I hived in my northern apiary a middle-aged swarm of bees, in a hive nearly filled with comb, and caged the queen—suspending her between the two central combs. This swarm filled the combs about two-thirds full of honey while the basswood trees were in blossom, closing July 25th. At that time I found the combs of a hive which I had stored away in my bee-chamber, and which contained about fifteen pounds of honey, were largely infested by worms, and I had concluded to let the bees carry out the honey. Fearing I might cause robbing, I carried both hives to the cellar and placed them on the floor, about three feet from the cellar door. In order to start the bees immediately I shook them off from one of the frames into the hive I intended to have cleaned, moved the two hives close together, and closed the cellar door. When thus closed, the cellar was perfectly dark, except that between the bottom and the door frame there was a small opening about a quarter of an inch wide. I had no idea that the bees would crawl three feet over the sandy floor of a cool cellar, and make use of that small opening for an entrance. Two weeks later, to my great surprise, I found that this colony had actually become accustomed to its new location and entrance, and had gone to work. They had carried nearly all the honey from the worm-infected hive to their own, and built some new comb.

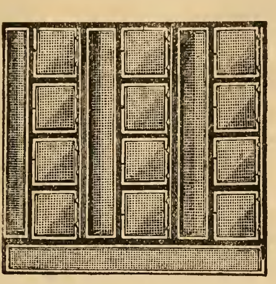
To ascertain how long a colony would survive without an addition of brood or bees, with its queen caged, I left this colony in this condition, in the cellar, till the 20th of September, when I found it had increased its stores somewhat, and still contained about three pints of workers, with the caged queen apparently in perfect health. It had not become drone-breeding, and had gathered and stored very little pollen. During the period of the basswood blossoms it had gathered only about as much honey as other swarms of the same size, although it had no combs to build; and in the month of August it stored scarcely one-fourth as much honey as other swarms with queens at liberty. I could not, therefore, say that it would be advisable to keep the queen of a colony caged for the purpose of saving all the honey that bees gather. It would seem that the worker bees do not labor with the same energy and perseverance, as when they have brood to nurse and provide for.

ADAM GRIMM.

JEFFERSON, WIS.

CHLOROFORMING, BEES!—"Sometime after this, I attempted to quiet an angry swarm of bees by slipping under the gum a sponge containing something over half an ounce of chloroform, and succeeded admirably. When they had become quiet, I removed what honey could be spared from their stores, and left them all quiet. They are quiet still, for the chloroform killed the last bee!"—*Dr. A. Love, in Southern Cultivator.*

For the American Bee Journal.



The Queen Nursery

is a *new invention* for raising queen bees at less than one-fourth of the former expense of raising them, besides securing their perfect safety up to the period when they should pass out to meet the drones.

It is secured to the inventor by letters patent, dated November 23, 1869. It is composed of a frame made of the size of a frame in any movable comb hive, divided into compartments consisting of one or a series of cages, covered and open ways.

The cages (permanent, or movable at will from the frame), are made in a square form, with a right-angled triangular piece of tin on each side of them—making a place between the tins to secure the feed for the young queens while in confinement. This feed consists of honey in the comb, or a sponge saturated with it. One side of each compartment is covered with fine wove wire cloth tacked fast. The other side of the nursery over part of the ways, is covered in the same manner; but the cages on this side of the nursery are covered with the wire cloth cut into pieces 2⅛ inches square, rimmed with tin, hinged, and hung as doors. The open ways are for the purpose of letting the worker bees pass from comb to comb, on each side of the nursery, when it is placed in the centre of a strong colony of bees, in place of one of the centre combs removed for the purpose.

The cages and ways are covered with wire cloth to protect the queen cells, incipient young queens, and their food, as long as they are required to be kept in confinement. Also, to secure the equal dissemination of the heat required to hatch and mature the new queens. The apertures from the cages into the covered ways are for the purpose of liberating the queens at the proper time. This is done by removing the tin slides which close the apertures. But one queen should be liberated at a time. They may also be liberated by opening the doors of the cages, or if the cages are removable from the nursery, they can (whenever desired) be removed to any hive where a queen is wanted, and there liberated.

The covered ways are thus arranged so that the young queen can pass clear to the entrance of the hive without danger of being destroyed as she goes out to meet the drones. And as she thus passes out for fertilization, can be caught in the "queen catcher" and confined with choice drones, as described in the AMERICAN BEE JOURNAL, vol. 5, No. 1, page 19.

To operate the nursery, cut from the combs as many sealed queen cells as required to suspend in one cage, (with the sealed end downward, as found in the combs); place also the honey for feed between the tins in the cages; close the doors; remove a central comb from a strong colony of bees, and put the nursery into its place—letting it remain there till all the queens are hatched and matured for fertilization. Then they can be liberated as above directed. See figure, for further explanation.

JEWELL DAVIS.

INDIANAPOLIS, IND.

For the American Bee Journal.

Italians, &c.

In the December number of the JOURNAL we notice an article from S. Way, in which he makes the point-blank assertion the "black bees will make as much honey as the Italians, if they receive the same attention;" and the only reason we can find for the statement is a little further on, that he has "no axe to grind in the matter."

Mr. Editor, do you not think that it would have sounded much more respectful to the hundreds, nay thousands, who are keeping the Italians, had he qualified his remark by saying "such was his opinion," or that "from his own experience he judged so?"

Is the opinion of one man in one locality to decide the matter? Are the many noble hearts (for we are sure there are such) who write for the JOURNAL, and who have spoken enthusiastically of their success with the Italians, all to be considered as having "axes to grind?" or as not having tested black bees side by side with the Italians?

We presume Mr. Way to be an honest, upright man; but we really fear he thinks himself the only one engaged in the bee business, as, with one exception, he is the only person we ever knew to declare the Italians no better than the common bees. The exception was Mr. Jasper Hazen, who from a careful experiment given in the *Rural New Yorker*, with less than a half dozen hives, declared to the world that black bees, with some care, can make a little the most honey. We cannot remember positively, but think the black bees, *in his hive*, made over 200 pounds per colony, and the Italians some less—which *latter* we think is so.

Why does Mr. Hazen fuss with half a dozen stocks? Had he such an apiary as Mr. Quinby and some others, two hundred pounds per swarm would be a large business with his hive—but perhaps patent hives pay still better.

NOVICE.

* * *

FOULBROOD is a disease exclusively of the larvæ, and not of the mature bees, nor of brood sufficiently advanced to be nearly ready to emerge.

For the American Bee Journal.

How to treat the Fertile Workers.

MR. EDITOR :—I see in the November number of the BEE JOURNAL, page 99, J. W. G. asks what should be done with a good colony containing a fertile worker, &c.

Now, it may be interesting to J. W. G., and perhaps to others, for me to relate a few experiments I have tried, the past season, with such a colony.

Early in the season I drove a swarm out of a cross-bar hive, for the purpose of making an artificial colony. In twenty-four hours after the operation, supposing I had succeeded in securing the old queen in the new colony, I introduced a queen cell to the old hive. On examining the same hive twenty-four hours afterwards, I found the inserted queen cell all destroyed. I then went to my new colony and found they had commenced building drone combs, and on taking out some of the combs I found eggs in quite a number of the cells; and from the irregularity of the manner in which they had been deposited—some cells have a number of eggs, (as many as eight) and some none at all—I was satisfied I had a worker to contend with, for I have had them to contend with before. I now thought I would try a few experiments with this colony. In the first place I introduced a capped queen cell. On examining again twenty-four hours afterwards, I found that the bees bad covered this cell completely all over with drone comb. I let them remain until it was past the time for the queen to hatch, and finding it did not hatch, I next introduced a queen in a wire cage, and on examining the hive again in the course of twenty-four hours, I found my queen dead in the cage, with two of her legs torn off.

I now turned the hive bottom up and tacked some wire cloth over the bottom, set it back again on its stand, and fumigated the bees with puff-ball. I allowed them to remain just fifteen minutes (having raised the hive up on little blocks, so that the air could pass under it); then removed the cap and honey-board, and dropped a young fertile queen in on the top of the bees. She was well received, and to-day that stand is as prosperous as any colony in my yard.

What effect the fumes of the puff-ball had on the worker, either mentally or physically, I am unable to tell. Whether it turned her "hate" into "love," or whether it killed her, others can judge as well as myself, but such was the result of my experiment.

My impression is that the fertile queen introduced as above stated, not being stupified with the fumes of the puff-ball, was in a state successfully to encounter any rival she might discover in performing the maternal duties of the hive.

One thing more; Mr. Thomas says we can successfully introduce queens with chloroform, *after* removing the old queen. Now, may we not do it *before* removing the old queen, on the principle before stated, allowing the introduced queen to kill her rival. Let some one report.

JOHN T. ROSE.

PETERSBURG, MONROE CO., MICH.

For the American Bee Journal.

Recollections of the New York State Fair.

In the last number of the BEE JOURNAL, Mr. Hadsell, of Breesport, N. Y., gives a brief account of what he saw and heard concerning bees, at the State Fair at Elmira, in September last.

I also had the pleasure of attending that Fair, and must confess that I found it a very poor place in which to learn anything about bees. I saw there the Mr. Graves, referred to by Mr. Hadsell, and although he is a man who devotes his whole time to bees and hives, selling "rights," transferring, &c., I must give him the credit of having some of the most absurd ideas pertaining to the subject, of any man I ever talked with, who pretended to know anything about it. If he did not profess to know everything, and attend such gatherings for the purpose of lecturing to the multitude, he would be excusable; but as it is, I think he is not.

For the edification of any readers of the JOURNAL who may not have been present on this noted occasion, I will relate a portion of the teachings of this "grave" man.

He had on exhibition a hive which he called the "Graves Hive." It was, I should judge, about two-thirds full of comb, built moderately straight upon the frames; and when asked if he had not selected them from different hives, he answered—"Why, no, sir! You could not do it. It would be impossible!" "Don't you see," he continued, "that the tops of the combs are thicker in some places than in others; and that they are built waving from one side of the frame to the other. How are you going to change them?" All the answer we could make to this, was that we had been performing impossibilities all summer, for what would frames amount to, if you could not change them?

He then informed me that though he very seldom made use of smoke, and never used a bee-dress, his bees "never stung him." Just then, a bee (which must have belonged to some one else, I suppose, as his own had been taught better manners) gave him a smart "dab" under the eye, which caused him to suspend operations for a few minutes. He said that he had kept Italian bees, but would have nothing more to do with them, as the other bees would soon "run them all out;" and when asked to give his reasons for forming this opinion, he said—"because there are *so many more of them*.

He also informed us that he practised artificial swarming altogether, and when requested to give his method of performing this operation, said he simply "took half the combs and bees from the hive, and just put them in a new hive, filling out with empty frames." We rather objected to this on account of the amount of drone comb that would surely be built, if any was built before the young queen hatched. Whereupon he exclaimed that this "theory" was all nonsense; that "bees would build worker comb just as well without a queen as with one!" This was too much, so we asked him if he read the BEE JOURNAL. "No," said he "you may read BEE

JOURNAL all your life, and you only get other people's ideas; when, if you *learn* anything about bees, you've got to learn it yourself from actual experience. It won't do to believe everything, because somebody says its so." We partially agreed with him here, believing that he was one of the company referred to by himself as "everybody," and hence took his own word that it would not do to believe, &c.

I. F. TILLINGHAST.

FACTORYVILLE, PA.

For the American Bee Journal.

Wintering Fertile Reserved Queens.

In the November number of the BEE JOURNAL, page 98, in the editorial appendage to I. F. Tillinghast's communication, the editor says—"What is wanted is some simple and efficient mode of doing it with a dozen or more at one operation, and with no greater trouble than is now incurred with one."

I think it can be done, and the *modus operandi* is simple.

Heretofore I have been in the habit of wintering queens in their nucleus hives, made to hold three frames from a large hive, doubling the nucleus swarms two into one, and placing them in a warm repository, 35° or 40° Fahrenheit, and all was right.

But I am now preparing to winter several in one large colony, having more queens than I can make strong nucleus swarms. The cages are made in a frame with strips half an inch thick, and as broad as the frame pieces, and placed $1\frac{1}{2}$ inches apart. Put the first strips horizontal with the frame, $1\frac{1}{2}$ inches either from the top or bottom of the frame, and nail through the end pieces of the frame into the ends of the strips. In the same manner fill the frame with strips $1\frac{1}{2}$ inches apart. Now cut your cross bars $1\frac{1}{2}$ inches long, and side them standing on end between the horizontal strips, $1\frac{1}{2}$ or two inches apart, as you like best, until the frame is full, or as full as you dare cage queens, approaching the ends, top, and bottom of the frame.

Now cover the frame on one side with wire cloth, tacking it firmly to each strip to hold them in place.

As the queens are caged, a square piece of wire cloth, covering the mouth of each cage on the opposite side of the frame is tacked on. When the cages are all full except one, capture the queen of a very populous colony in a large hive, and put her in the empty cage. Now remove a frame from the center of the hive, and if necessary to cause the bees to cluster from end to end of the frames, condense them by crowding them to one side of the hive with the dividing board, and insert your frame of caged queens in place of the one removed: and as soon as the weather is sufficiently cool, place the hive in a warm, dry repository, of the temperature of about 35° or 40° F., and I will risk the queens coming out right in the spring. Should the result be different, I shall exclaim—"As in all other things, *theory* must fall when *practice* demonstrates the opposite."

A. SALISBURY.

CAMARGO, ILLS., Nov. 8, 1869.

For the American Bee Journal.

The Honey Extractor.

I had my first experience with this machine last season, and found that it is just the thing for beekeepers.

I employed it but little in my own apiary, but used it for other beekeepers enough to satisfy myself that all who keep bees should have one of them, if they desire to make a sure thing to have honey enough for their own use.

A beekeeper called to see me one day in June last, and said his bees would not work in the boxes, and desired me to bring my machine and take the honey out of all his hives. I did so. I opened every hive he had, took out all the frames, brushed the bees off into the cap, and with a sharp knife uncapped all the cells of the combs. I then removed the honey with my extractor, which worked like a charm.

The hives operated upon were the shallow Langstroth form; some of the combs were crooked, and eight out of every ten contained sealed and unsealed brood; but neither the brood nor the combs were injured, and the bees worked next day just as though nothing had happened.

This fall I examined those hives, and all of them had enough honey to keep them ten months. Each of the hives was heavier than some that were not touched at all during the season.

My advice to beekeepers who have trouble in getting surplus honey, is, to purchase or make and use a honey machine. With the aid of my fumigator, I have no trouble in opening the largest stock of bees, and taking the honey from them.

HENRY ALLEY.

WENHAM, MASS.

For the American Bee Journal.

Artificial Swarms.

I make artificial swarms thus: Take a hive of bees strong enough in numbers to make a strong swarm. On a pleasant day, when large numbers are out at work, remove it from its stand, and set the new hive in its place with the frames all in the right position. Then take out the combs, one by one, and with a feather brush *all* the bees and the queen off of all the combs, down on a sheet or board in front of the new or prepared hive, so that they may run up hill into it. Put the comb frames deprived of bees into an empty hive as they are brushed off, being careful not to leave a single bee on them. When all are in, remove some other strong hive from its stand to some other place, and in its stead set the hive containing the combs without bees. Then put a fertile queen caged between two brood combs in this hive, near the centre, and let her remain thus two or three days. Then release the queen, and the work is done. Bees enough will come from the removed hive to the old stand to take care of the brood and queen. In a few days the old hive will be strong in bees. The swarm brushed off the combs will of course be a strong one. The brushing off of *all* the bees was suggested to me by Mr. R. C. Otis.

P. W. MCFATRIDGE.

CARTHAGE, IND.

For the American Bee Journal.

Introducing Queens, and the Honey-Emptier.

Mr. Editor:—As your correspondent, W. C. Condit, wishes some of the correspondents of the Bee Journal to give their experience in introducing queens with grated nutmeg, I would inform him that I have introduced a good many queens this season in that manner. If done in the morning or evening I have been very successful; but in the middle of the day, or when there were many bees out in the field, I have not been so successful.

Bees here have done very well the latter part of the season, or during August and September. The early part of the season having been wet and cold, there was no white clover or basswood honey secured in surplus boxes; but the bees gathered enough to keep the queen breeding very rapidly, and bees generally swarmed a great deal. Stocks that did not swarm gave good returns in surplus.

I used the honey machine on one hive, and got two hundred and eighteen (218) pounds of honey, as follows:

July 7	16½ ℔
" 28	6 "
August 14	27¼ "
" 21	35¾ "
" 27	34 "
September 6	33 "
" 11	28½ "
" 21	37 "
	218 ℔

And I could have got more if I had emyloyed the machine oftener. I would not be without the honey machine for three times what it cost; but it should be made of tin or zinc, because wood absorbs so much honey that it will soon sour in warm weather, however careful you may be with it.

I can say to friend Gallup that there are plenty of those "shallow things" in use in this part of the west, and some as shallow as seven inches—that is, seven inches depth of frame. These shallow things give more surplus in boxes than the deep hive; but the shallowest ones have to be wintered in doors.

R. R. Murphy.

Fulton, Ills., Dec. 9.

* * *

While Huber resided at Cour, and afterwards at Vevay, his bees suffered so much from scanty pasturage, that he could only preserve them by feeding, although stocks that were but two miles from him were, in each case, storing their hives abundantly.

* * *

Small ants sometime make their nests about hives, to have the benefit of their warmth, and neither molest the bees nor are molested by them.

For the American Bee Journal.

A Non-fertile Queen Bee.

At the beginning of August, this year, I removed an extra nice queen from a colony of Italian bees, for the purpose of getting queen cells started. On examination, on the ninth day, I found only two sealed queen cells, with quite a large amount of brood still unsealed. To ascertain whether the bees would build any more queen cells and could raise a good queen, I took away both of those sealed cells. Two days later, I found only one more sealed queen cell, from which in due time a fine large queen hatched; but she never laid an egg, though all the other young queens mature at that time became fertile in due season. I therefore concluded to kill her, to make room for a better one. On catching her by the wings, however, she made a motion, the same as workers do, to sting me—thrusting out her sting, from which was suspended as large a drop of poison as is seen on the sting of a worker in such case.

On several other occasions, queens raised in such *post festum* built royal cells, became fertile indeed, but soon turned drone layers. And in a number of instances I have had queens superseded when only a week or ten days old, for some similar reason undoubtedly.

Adam Grimm.

Jefferson, Wis., Dec. 8, 1869.

* * *

For the American Bee Journal.

Chilling Brood.

Mr. Editor:—I think that young brood is not so easily chilled, by exposure to cold, as many suppose; as I have been told by experienced beekeepers that it would not do to take a sheet of brood out of a hive unless the weather was quite warm.

Having in one of my hives, last season, a sheet of drone comb filled with young larvæ, I thought I would kill the brood, in order to have the comb filled with honey. So I put it into an ice-chest and left it there for about thirty hours, where the temperature was not far from the freezing point. Supposing everything dead, I put it into the hive. But on looking at it next day, I found that not one was hurt.

I then placed it in an empty hive, and in that burned a piece of brimstone, leaving it for about an hour. On close examination I found that there were still a few live larvæ in it. I then gave it another brimstoning, which finished them. I returned it to the hive, and in a few hours the bees had it cleaned out, and were putting in honey.

Lester Carpenter.

Kelley's Island, Ohio.

* * *

Huber demonstrated that bees have an exceedingly acute sense of smell, and that unpleasant odors quickly excite their anger.

THE AMERICAN BEE JOURNAL.

WASHINGTON, JANUARY, 1870.

Special Premiums and Club Terms.

THE HORTICULTURIST AND THE AMERICAN BEE JOURNAL.

By special arrangement, we offer THE HORTICULTURIST, published by Henry T. Williams, New York, as a premium for five new subscribers to the AMERICAN BEE JOURNAL; or will offer THE HORTICULTURIST and the AMERICAN BEE JOURNAL on club terms, together, for $3 75, (full price being $4 50), each club subscriber being entitled to a choice steel-plate engraving, COUNTRY LIFE, and a copy of Adair's ANNALS OF BEE CULTURE.

We commend THE HORTICULTURIST to the attention of lovers of fruits, flowers, and rural embellishments. Having been greatly improved this year, it will be found one of the best and most valuable horticultural journals published in the United States.

Ohio Bee-keepers' Convention.

We are requested to announce that, in accordance with the adjournment at Toledo, the Ohio Beekeepers' Convention will meet in Cleveland, Ohio, on *Wednesday, January* 13, 1870, at 10 o'clock A. M., at the City Hotel, where rooms have been offered free for the accommodation of the meeting. A general attendance of Ohio beekeepers is solicited; and persons engaged or interested in bee culture in other States are cordially invited to be present and participate in the proceedings.

The Foulbrood Controversy.

We have received from the Baroness of Berlepsch and Mr. Lambrecht, some additional communications respecting the foulbrood theories of the latter and Dr. Preuss; but having already published in detail the views of the subject entertained by both parties, we cannot afford to devote further space to discussions involving no direct practical results. Mr. Lambrecht, in addition to his theoretical speculations, gave what he regarded as a practical domonstration of the correctness of the position assumed by him, and of the efficacy of his curative process. This we promptly submitted to the judgment of our readers, stating at the same time that its validity was questioned by those who do not accept the theory. If now Dr. Preuss. or any of his apiarian friends, will favor the beekeeping community with evidence of his ability to *cure the disease* in accordance with his theory of its cause or source, we shall take great pleasure in placing the facts before the readers of the JOURNAL, and do so promptly. We desire to see both theories so subjected to the test of actual experiment that the issue may clearly and conclusively settle the validity and availability of the means employed; and we shall certainly not withhold cordial commendation from him whose remedial process successfully abides this test—and if both prove efficacious, the benefit accruing therefrom to practical bee culture will be only the greater and more gratifying. It is a homely adage, but none the less pointed, that "*the proof of the pudding is in the eating of it.*"

☞Just as we write this, we receive from an esteemed distant correspondent the following statement of the occurrence of foulbrood in his apiary, and of the mode of its origination. Without stopping now to investigate the bearing of the facts in this case on the several theories in question—we hope to hear, early, that the malady has been arrested and subdued.

MR. EDITOR:—I have foulbrood in six hives. I am sure of it, although I never saw it before. And the worst of all is, I am confident I produced it myself. I cut a bee tree in September last. The tree was a large oak—mashed up badly. I scooped up out of the hollow, several buckets of comb, dead bees, pollen, &c., intending to have it strained up; but putting it in a storeroom, overlooked it for several days; at the end of which time it was reported to me as being in a state of fermentation. I ordered it, without thinking, to be thrown out—which was done. Passing near the place some hours afterwards, I noticed thousands of bees at work, carrying it away. I did not think of what I had done, until several weeks afterwards, I noticed in opening a hive near this place a horrible stench, unlike anything in the odor line I had ever met with before. Upon examination, I found the hive full of dead brood. I examined and found six in the same condition. I removed a comb to a study hive, and placing a very prolific queen in it, found that only a few bees matured of the many hundreds that were sealed up apparently in good condition. This study hive I placed in my parlor window, and the stench arising from it was so great that I could scarcely remain in the room. I can now distinguish the peculiar odor several feet from the hives affected, although there is no young brood at this time in any of them. What shall I do? I have written to Mr. Langstroth. He says, burn hives and all. But as these are the only frame hives I have, or have ever seen, I am loth to burn them. I have them three miles from any others, and would be glad if you, or any of your readers, could suggest a cure by which I may preserve both bees and hives. I am willing to sacrifice the comb. Our bees are out now almost every day. They are not often confined in this latitude longer than a week at any time during the winter.

W. H. MORGAN.

SHELL BLUFF, YAZOO RIVER, MISS., Dec. 3, 1869.

Correspondence of the Bee Journal.

LIMA, OHIO, Nov. 22.—Bees have done poorly again this season, it having rained almost constantly up to July 20. But August was good, and bees have generally filled their hives and are in good wintering condition. The Italians swarmed enough, and made some surplus honey; while of the black bees not one stock in twenty have swarmed at all, and made no surplus.—S. SANFORD.

MONMOUTH, ILLS., Nov. 22.—We have had a severe snow storm here during the past ten days. To-day it began to thaw. Bees are in fine condition for wintering, in regard to the amount of honey. I increased my stock one and one third, and made them average me one hundred and ten (110) pounds to the stand—which I think is doing pretty well.—T. G. MCGAW.

UPPERVILLE, VA., Nov. 22.—I intended a rather curious present for you a few days ago. A colored man found a swarm of bees which had built a considerable quantity of comb on the under side of a limb of a tree, It must have gone there very early in the spring, judging from the quantity of comb built. I made a glass box, intending to saw the limb off on each side of the comb and fasten it in the box. But unfortunately some one went there, and as a matter of course broke it to pieces. The foliage on the trees prevented it from being found sooner. I should have been pleased if I could have procured it all safe, and sent it to you as a curiosity.—H. W. WHITE.

☞We knew of a similar instance about twenty years ago, and in that case also the combs were broken and the swarm destroyed in the attempt to remove it.—ED.

Glendale, Ohio, Nov. 25.—Bees have done *remarkably* well with us the past season, making a *very* large yield of honey. I notice that mine have their combs so full of honey, that I fear there is not enough empty comb for them to winter on. I have the Italian bees, which I obtained from Mr. Langstroth, and find them greatly superior to the common bee. In the neighborhood of my bees one could see *scores* of them, at almost any spot, on the red clover, in July and August. During that time, which is unusual here, comb-building went on briskly, and much honey was stored.

I shall have to defer my report on bee pasturage to another season, on account of losing my memoranda. It is to be hoped that we shall have many other reports on bee pasturage, in addition to the valuable ones we have already had, in the Journal, from several sources. I hope to add mine another year.—John Hussey

Constantia, N. Y., Nov. 29.—Bee culture, in this part of the State of New York, has been a failure the past season, on account of so much wet weather: and a number of beekeepers will have to feed their bees this winter. From eighteen good swarms of black bees I did not get ten pounds of honey.—W. Sheldon.

Waterville, Vt., Nov. 30.—Bees have not done very well around here this season, on account of the weather being so cold and wet during the entire period. Swarms were late; few coming off before July 1st. Box honey is scarce, there having been little taken off in this neighborhood. There is quite a number of beekeepers around here, whose bees are now dying from starvation. The bees have been living on their winter stores since August 15th—consuming on an average about twelve (12) pounds, each, since that date; and unless fed many will starve before spring. We have now fully four months to keep our bees in, before they can fly.

Bee culture is in a rude state about here. There are only two persons in this neighborhood keeping bees in movable comb hives—myself being one of them. I made me a "honey emptying machine" last winter, and people looked upon it with wonder, and wanted to know where I found such a thing as that, saying they had kept bees for twenty years and never heard of the like of it before.—O. P. Codding, Apiarian.

Albany, Ills., Nov. 17.—My bees have done very well this season. I had ten stocks in the spring, and now have twenty-five, all in good condition for winter. My best stock swarmed twice and filled fourteen six-pound boxes. The first swarm came off June 4th. I filled the hive with empty combs. The second swarm came off June 12th, and filled eight six-pound boxes. The first swarm swarmed twice and filled eight six-pound boxes. The first of these swarms came off July 9th, and filled three and almost the fourth six-pound boxes. The second came off August 5th.

The four swarms at $5 each make $20: and two hundred pounds of box honey at 25 cents per pound make $50—the increase of stock and the honey making together $70. If I had a honey emptying machine, I could take 50 or 75 pounds more.

The bees in this vicinity gathered honey abundantly up to the 26th of September. The original stock above-mentioned commenced storing honey while the cherry trees were in blossom.—Andrew Byers.

Dover, N. H., Dec. 3.—Next in importance to my religious papers, do I consider the Bee Journal. I am unwilling to do without it. Bees have not done as well this season, as for two seasons previous: yet the intelligent beekeeper can receive ample compensation in seasons like this for his time and expenses. Within please find two dollars for the Bee Journal.—Jesse Meader.

Birmingham, Iowa, Nov. 29.—I neglected to tell you in my last note, that although my bees did well this season, and have at present more honey than they need for winter, yet the colonies contain fewer bees than they did at this time last season. The honey harvest was very abundant here from August 13th till October 1st, and the queens had very little space to lay in during that time: hence the small colonies at present. I have always wintered my bees out of doors, but I really fear, from the present condition of my stocks, that if the coming winter is very severe, I shall lose a good many.—John Locke.

Niagara, Canada, Dec. 10.—I found the last a very poor season. The bees increased sufficiently, but honey was very scarce. I had not one box filled, and had to reduce my stock to the number I started with in spring. F. G. Nash.

Hartland, Vt., Dec. 14.—The past season was the poorest that we have experienced. Bees have been dying about here ever since the 10th of August. We have kept bees four years, wintered them in our house cellar, and have lost only one swarm since we began keeping bees. We have now upwards of thirty stocks in our cellar: but I am afraid that we shall not be able to say next spring that we never lost but one swarm. As we were anxious to keep our number full, we fed those that needed it instead of uniting them as we should have done. Breeding not having been carried on to any great extent, about here, after the 20th of July, our colonies are not as populous as they usually were in the fall of the year. The past season will undoubtedly prove rather discouraging to many new beginners, but not to us. Beekeeping always has been attended with now and then a poor season; and therefore we anticipate to have plenty of box and machine honey next season.—Geo. M. D. Ruggles.

North Bennington, Vt., Nov. 14.—I have read your valuable Journal for the last two years, with a great deal of interest, and prize it very much. I would not do without it for double the cost: all the fault is, it does not come often enough.

I have been very much interested in bees for a number of years, but never owned any till the fall of 1868. I then bought fourteen colonies in box hives, all Italians but six, and those were hybrid. I had those six Italianized by Mr. Carey, of Coleraine, Mass. They produced finely marked workers, but the queens did not seem to be very prolific. Five of them have died off. I wish to tell you of a caper one of those swarms played last spring, in May, when there was only about a quart of black bees left in the hive, the rest being Italians. I went through the apiary in the afternoon, and just at night; and all was quiet enough. Next morning, when it was hardly light, I came to this hive, and lo! the Italians had gone to work in the night and killed every black bee in the hive. When they had got through they went to work as quietly and regularly as though civil war was perfectly right. I know they were not robbed, for my other bees were not out, nor those of my neighbors.

I wintered my bees in the house, or tried to; but in February I had to take them out, as they had become uneasy—it being very warm for two or three days. I carried them out in the evening and gave them air, but did not let them fly till next day: then they did not all rush out at once. I have had a building erected to house them in this winter. It is 14 feet by 18, with eleven feet posts, thus giving me a nice warm room to work in when bees are not in, and a place overhead to store hives, boxes, lumber, &c. It is very handy, and I would not do without it for the $125 which it cost. Novice will agree with me when his beehouse is built.

I am going to adopt frame hives, for I see plainly that we are behind the times in beekeeping here, where no such hives are yet used. The bee fever ran very high here last spring, as bees did well. There being an abundance of fruit blossoms, they began to swarm early; then followed a cold and rainy spell, raining about all the time the white clover was in bloom. My Italians got a chance to work on red clover a few days, and they lugged in honey lively. That, I think, was what saved them. I do not get any box honey; but I know of some beekeepers—not apiarians by any means—who have brimstoned from ten to twenty swarms of black bees at a time, for want of honey. By the way, prices of bees are very low in this vicinity this fall. I heard a man offer 46 swarms, 200 boxes, and a lot of hives, for $4 50 per swarm. He could not give them to me. He has kept bees a number of years, and supposes it is time for him to run out; and I guess he or any other man will that buys bees up North cheap, where they get foulbrood as they have it in that yard.

I send you this, as I have never seen any article from beekeepers in this quarter, in the Bee Journal. Inclosed you will find two dollars, for renewal of subscription. Wishing you and all beekeepers success, I am yours truly,

C. H. Bassett.

AMERICAN BEE JOURNAL.

EDITED AND PUBLISHED BY SAMUEL WAGNER, WASHINGTON, D. C.

AT TWO DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

VOL. V. FEBRUARY, 1870. No. 8.

[For the American Bee Journal.]

Experiences, Observations, Experiments, and Results.

The readers of the Journal will recollect that, in the fall of 1868, I put thirty-three colonies of bees in winter quarters, and also one queenless stock which had been reduced to about a pint of bees. Some of the said colonies were badly reduced in numbers on account of the unfavorable season. However, all wintered, and wintered well, with the exception of two strong ones, which I came very near losing about the first of March, with what some people would call constipation. This was in consequence of those two colonies having a large quantity of sumac honey, which is of a peculiar bitter taste and a very waxy nature. The remedy I used was to give each of them a couple of cards of good honey from other colonies. This sumac honey answers a good purpose at any time when the bees can fly out; but is injurious if consumed when they are confined to their hive for any length of time.

On the 24th of March, 1869, I commenced setting out my bees. Every colony was thoroughly examined, and I found two with two queens in each. One of these queens had apparently just been hatched, as the cap of the cell was still attached to one side of it, and she looked very young. The other two queens were both fertile, and I took one of them away to supply the little queenless colony. This made an increase of one swarm during the winter. I think this queenless stock, consisting of only about a pint of bees, was a fair test of my plan of ventilation. I will here also remark that, from observations made in the last two years, I am satisfied that when we come to investigate the matter closely, the presence of two queens in one hive will be found not to be so rare an occurrence as was formerly supposed. I could give several instances which came under my own notice within said time.

After setting out the bees, equalising stores, &c., I commenced feeding wheat flour, and they worked on it for thirty days in succession, with the exception of two days, when confined on account of a light snow. They began carrying in pollen on the 17th of April, though they still kept at the flour a while longer. On the 18th they carried in a considerable quantity of honey from elm tree blossoms, and pollen from the willows and poplars. In this time the thirty-four colonies used up nearly two hundred pounds of flour.

I kept on equalising brood and honey, and on the 20th of May had every colony in excellent condition. Here I will give my memorandum, just as I find it in my diary:

April 18.—Bees gather large quantities of pollen and some honey from rock elm blossoms.

April 26 and 27.—Cold rain.

May 6 to 10.—Rock or sugar maple in full bloom, with excellent weather for bees.

May 11.—Early wild plums and wild red cherries in bloom; weather excellent. Then follows a succession of cold rains, from the north, to the 6th of June. Thus we lost nearly all the benefit of the wild plum and wild apple blossoms.

June 8.—Nearly every colony has commenced preparations for swarming. Though not one of them had gathered sufficient honey at any time to build a particle of comb, yet they kept up brooding to the highest point. I bought four swarms from a neighbor, and several hives of empty comb. On the 18th of May I allowed an Italian swarm to issue, and gave it a hive furnished with empty comb. On the 11th I allowed a swarm of mixed blood to issue, and gave it likewise a hive supplied with comb. On the 18th I was compelled to commence feeding all my blacks and bees of mixed blood; and continued feeding more or less for thirty-five days in succession. Our sumac was all blighted, and so were the basswood blossoms, which are our main dependence for bee pasturage in July. The basswood produced abundantly from the 24th to 28th of July—just three days. August was good; September was better; yet a great proportion of the black bees perished in midsummer for want or food. One of my neighbors had nine colonies last spring, and has now one good and two poor ones; another had six, and now has three; a third had thirteen, and now has three; while a fourth had three stocks of nearly pure Italians, and now has seven, though he lost two swarms by flight. He also returned five or six swarms to their parent stocks. They kept issuing up to the 10th of September. To my own Italians I did not feed a particle, with the exception of their using their share of the flour in early spring.

All this time, while the blacks and the mixed bloods were starving unless fed, my Italians were rearing brood in abundance, and would have swarmed if I had allowed it; but they did not gather enough to induce them to build a particle of comb. If away from home two days, I would find my blacks and mixed bloods helpless on my return; and one strong stock, which by some hocus pocus happened to be overlooked, was on the third day found dead past redemption. In the whole forty stocks, Italians and all, there would on some mornings not be a single ounce of honey; yet, in the evening, the Italians would have three or four hundred cells filled with the shining nectar. My black swarm, that came out on the 11th of June, I returned to its parent stock after feeding it fifteen days, as the parent stock had lost its queen. The Italians, that came out on the 10th, filled their hive and stored forty pounds of excellent surplus honey without a particle of feeding.

This was the worst season for queen-raising that I ever knew. Out of one batch of thirty young queens I had four that were partially fertilized, three drone-egg laying queens, and four barren ones—all the rest were lost. Now, you will want to know about the partially fertilized ones. Well, they laid all their eggs in worker cells and in regular order; but a large proportion were drone eggs, and all mixed promiscuously—say two or three, and sometimes five or six workers, and then from eight to ten, or at times from fifteen to twenty drones; and occasionally a solitary worker entirely surrounded by drones, and *vice versa*. Among this lot of queens I had one that laid an abundance of eggs, but not one ever hatched! I kept these partially fertilized queens forty-five days, and their worker-egg laying ability regularly diminished, and ultimately failed altogether.

My disposition to experiment cropped out in full force during this time of scarcity; and I will give the reader the results, without going into detail:

First.—I found that a strong colony, while breeding rapidly, consumes two quarts of sweet water per day.

Second.—That sealed brood, not mature, introduced into a strong stock fed just sufficient to keep the bees alive, would perish and become putrid in three days.

Third.—That queens started in such circumstances did not mature under eighteen or twenty, and in one case twenty-four days.

Fourth.—That eggs introduced into a strong colony fed barely sufficient to keep it from starving, would not hatch until the bees commenced gathering honey, or until they were fed more plentifully.

Fifth.—That a colony deprived of its queen during such time of scarcity, and while there was no brood in the cell, could not be induced to accept a queen cell in any other manner than by introducing eggs, larvæ, and unsealed brood, and feeding them abundantly for forty-eight hours. Then the queen cell would be accepted. Under other circumstances I kept colonies without a queen eight days, and the cells would be destroyed, in every instance, soon after being introduced.

The result of the season's operations is that I have made a miserable, and I may say an almost total, failure in my endeavor to Italianize all my stocks. My blacks and mixed bloods have been a bill of expense to me; and I have had to use all the force and energy of my Italians to get my other stocks into wintering condition. Two stocks of Italians that I did not allow to swarm, and from which I took very little brood, have stored, the one thirty-five and the other forty pounds of surplus honey. My Italians are all extra heavy; while the blacks and mixed bloods, after all my feeding and strengthening, are only in fair condition, and some of them rather indifferent. What I mean by my mixed bloods is, a majority of them are *two-striped*. My workers from pure queens, or queens reared from pure mothers and fertilized by impure or black drones, have required very little feeding; but those raised from impure mothers, or the two-striped fellows, were the greatest pests, as robbers, I ever saw. They intruded into the house, into the pans of milk, on the table, into your pies, sauce, and everything eatable. They even endeavored to rob the pure three-striped Italians, and were eager to rush into all manner of mischief; whereas I would almost warrant a pure colony to mind its own business. I will remark here that I think it is the impure Italians that have given the pure their bad name for robbing, &c. The reason why I have kept such fellows heretofore was because prominent bee-keepers have informed me that on the whole they considered them the most profitable; and the seasons of 1867 and 1868 had almost convinced me that they were correct. But this season has got me altogether out of conceit of the little rascals. Mr. H. Faul, of Council Bluffs, thinks I may have queens to sell. Well, I will sell him some of those hybrids mighty cheap next spring, since he likes them so well and I do not; or I will trade with him for pure ones. (See what he says about Gallup in one of the back numbers of the BEE JOURNAL.) Understand that I am by no means discouraged; for if I have gained nothing else, I have become satisfied on some points that I have long felt an interest in solving for my own satisfaction. See my second statement above. I have long thought that brood perishing as there stated, in consequence of a lack of animal heat, might be what some people call foulbrood, or might be the cause and source of that disease.

ELISHA GALLUP.

Osage, Iowa.

[For the American Bee Journal.]

Pollen as Bee Feed.

MR. EDITOR:—I beg leave to clip from our country daily, if you think it worth insertion in your columns, the following article on bee feeding:

FEEDING BEES.

"It is sometimes very difficult to enable bees to live through the winter, owing to the exhaustion of their store. The bee-bread is their special feed, and that is decidedly better for them than the pure, liquid honey. It appears to be more nutritious, and the same quantity sustains them longer. They do not feed upon the honey till the bee-bread is consumed. When they do begin upon the honey they devour it very rapidly. The following experience may be of advantage to apiarians:

"Some years since, during the latter part of winter, the bees were discovered to be dying. No cause could be detected for some time. In the loft of the kitchen there was a quantity of the honey locust. One day the bees were seen falling from the garret to the floor beneath. This suggested the idea of their trouble. They were perishing for food, and had found the locusts, and were trying to feed upon them. Closer examination showed that they were very week and poor, appearing unusually small. The spring was so near at hand with its flowers that they did not need to be pensioners long. They were saved with the following food: Water, sweetened with molasses, dried fruit stewed and cut into small pieces, and put in the water. Take out the empty comb carefully and fill it with this, and put it in the gum or near the entrance. The little creatures seemed to appreciate the kindness that saved them in their extremity. They would gather around the kind friend as their little repast was brought to them, just as chickens gather about the one who feeds them, and they showed no disposition whatever to sting their rescuer. As soon as the season opened they ceased to run to the hand that fed them, preferring to go abroad and glean a support by their own industrious toil. The necessity of regularity in feeding was proven in this case. The molasses being consumed, one day passed before any more was obtained. Intermitting the feeding that one day caused the loss of one hive. By the use of two gallons of molasses thirteen hives were saved through the famine until the opening season rendered them self-supporting. They didn't need to be fed long."

The idea is not entirely new to me. I have always had my doubts whether bee-bread or pollen, collected in such large quantities in the hive, should be used merely to nourish the embryo bees or to facilitate the elaboration of wax, and whether bee-bread did not also enter for a good share in the daily food of the bees in the hive. Is not the want of it the cause of dysentery during the latter days of winter, after the store of bee-bread has been exhausted in the hive? Swarms with plenty of honey, but destitute of bee-bread or pollen, will not thrive or winter well. Let practical and observing bee-keepers study and experiment, and report to the BEE JOURNAL their further investigation on the uses of pollen in the hive.

JOHN N. ROTTIERS.

Lafargeville, N. Y.

[For the American Bee Journal.]

Trials and Queries of a Beginner.

MR. EDITOR:—I have for a long time promised myself to write something for the BEE JOURNAL, but have often found that, like other promises we hear of, they are made to be broken, though I have made up my mind for once to keep mine—so here goes. To begin, I will give you an abridged biography. I was born in the year 1836, and consequently am in the large side of thirty-three years old. I am a native of New York State; removed West in 1844; received my early training in a fruit and ornamental garden, but for the last fourteen years have been engaged in mechanical business (a mason by trade); stand five feet nine inches in boots; weigh one hundred and fifty-nine pounds; in temperament am always ready to receive truth, but not credulous enough for theories to go down without evidence; am a great lover of honey, and an enthusiastic admirer of the honey-bee. But, Mr. Editor, this is as much as—perhaps more than—will interest your readers; so I will try and give a little of my experience in bee-keeping.

Having, as I supposed, a splendid offer of a swarm of bees in a barrel, I bought them, paying the very moderate sum of thirty dollars ($30) for them. They were very heavy, and some of my bee-keeping neighbors assured me that I should without doubt get four or five large swarms from them that year. This I believed, of course; brought them home, with high hopes of a "honeyed future." But, alas! that we should all be doomed to disappointment. You may imagine how eagerly I watched them night and day, and with what pleasant anticipations I looked forward to the time when the first swarm (of the dimensions of a two-bushel basket, or more,) should make its appearance. In the meantime, I had expressed to some of my bee-keeping neighbors my determination to send for "Quinby's Mysteries," which I had seen advertised in the *Agriculturist.* This, of course, displeased them very much, for it gave evidence of two facts: 1st, that I was losing confidence in their counsel; and 2d, that I was determined not to fool away my time and money running after new "Mysteries and Isms." However, Quinby came to my relief in time to assure me that I need not look for an endless number of "large swarms" out of my old barrel. Also, that it was useless to try to get them to colonize themselves in empty boxes, at sides and rear, connected with the main hive by tin tubes, &c.; of which facts I had become pretty well satisfied already.

You may guess that I soon made up my mind that I knew very little about bees, and I lost no time in telling my boasting neighbors that they knew less than I had given them credit for. I immediately went to work and made a frame hive with nine frames of the Quinby pattern (for I then considered him thoroughly posted on bee matters, and of course must be correct as regards form of hive as well as theory); and on the 7th of July, in the evening, after it had got dark enough that the bees could not see to sting, I went at them with hammer and tongs, &c., and sometime before daylight next morning had robbed them of all their honey and got them in my empty hive, with a few pieces of worthless comb, *guessing* they were all right. But, to all whom it may concern, I may certify that that job effectually cured me of all desire to handle live bees in the dark. The summing up of the matter was that I had about sixty pounds of poor honey, eight pounds of wax, and a large swarm of bees in an empty frame hive; with a countenance so disfigured next day that my friend's didn't "know me." If the remainder of the season had been unfavorable this would probably have been the end of my experience in bee-keeping; but fortunately the weather subsequently proved to be favorable, and at the close of the honey harvest I could make the following footing up:

BARREL OF BEES,		CR.
By 60 lbs. honey from swarm		$15 00
" 90 " choice box honey		31 50
" 8 " wax		3 20
" Swarm No. 1 in frame hive		10 00
Total		$59 70
BARREL OF BEES,	DR.	
To cash paid	$30 00	
" new hive	2 00	32 00
Balance, profit for the season		$27 70

Thus you see that after all I had nothing to complain of with the footing up of the season's work with one swarm. But what I valued more than all the rest was that I had learned some valuable lessons—the best of which was that I was ignorant of the habits of the honey-bee, and that the necessary knowledge was within my reach.

My experience in bee-keeping only dates back four years; but I am still determined to press forward in the good cause (as they say at meetings), feeling myself well paid for my trouble in the pleasure if there were no profit in the business. The last two seasons have been very unfavorable for bees in this locality; yet, so far as I am acquainted, those that had a reasonable chance have yielded a fair profit this year.

Now that I have given a pretty thorough account of my first year's experience, I will notice a case or two that came under my observation the past season, and would like to have some one that is thoroughly posted furnish an explanation.

About the first of June I formed two nuclei by placing in small hives, each, a frame of brood and adhering bees, and setting them away in a dark cellar for three days. In due time I examined them, and found in one three fine looking queen cells, nearly ready to hatch; in the other I found none—the bees having evidently neglected to start one. I then went to the one that had the three and carefully removed one, giving it to the other that had started none. On examination next day I found this cell destroyed. I then gave them a comb containing eggs and larvæ. Three days later I examined them again, and to my surprise could find nothing that looked like a queen cell. I was then called from home, and on my return I opened my nucleus and found a queen cell torn open at the side, the embryo queen having evidently been destroyed. On looking a little further I found a very diminutive black queen, with unmistakable signs of having just mated with a drone. This was eleven days after the brood comb was given them, and eight days after I examined and could find no cells. In two days more this queen was depositing a few eggs. Meantime, my other young queen had commenced to lay freely. I then divided a full stock and set the new swarm on the old stand, without a queen—having left the queen in the old stock, which I removed to the stand of another strong stock transferred to a new place.

As soon as the new swarm exhibited signs of queenlessness I went to the nucleus that contained the good queen and looked for her, to give to my new swarm; but just at that time she did not propose to be found. So I gave up the search, and went and caught my dwarf and placed her in front of the new swarm. But she did not deign to go in, but took wing, and away she went. I then went to the other nucleus, found the queen, and gave her to the swarm. Next morning both the nuclei were in commotion, and were evidently queenless. The following morning, being the second day after I removed the queen, I again examined the nucleus from which I had taken the perfect queen, and found the bees had built a few inches of drone comb, which was nearly filled with eggs. I also found my little black queen, or her ghost, as quiet as though she had always belonged there. A few days later she was laying worker eggs again, and continued to lay worker eggs the rest of the season. For experiment, I am trying to winter her in her nucleus. Question 1st. Was she one of Gallup's eight-day queens? and, if so, had she failed when she commenced to lay drone eggs, and was she fertilized or revived in some other way? Question 2d. Where had she kept herself for at least twenty-four hours, before she found the other nucleus? I am aware that some will say I was mistaken about this being the same queen; but my evidence is so good that you will not make me doubt it.

The other case is as follows: About the 25th of September Mr. W. H. Furman, of Cedar Rapids, Iowa, was at my place with two Italian queens. One of these we gave to a full stock, the other we inserted in a small nucleus (from which I had just taken the queen) to keep her over night. The night was cool, and the bees did not cluster around the queen. The consequence was that the queen and her attendants were so chilled in the morning that they could scarcely move a leg. We warmed and revived her, and then inserted her in a black colony. Three days later I examined, and found both these queens laying freely. In two weeks I found brood in both hives, in all stages, and saw both queens. About three weeks after I introduced the queens the weather turned so cold that I took my bees in. After they had been in the cellar for near two weeks we had a day so warm and fine that I took these two swarms out, to see the young Italians fly. From the one a goodly number of nicely marked Italians flew; while from the other, which contained the queen that had been chilled, not an Italian bee flew out. I then made a careful examination and found the queen as yellow as ever, but not a bee could I find in the hive with even a mark of a hybrid. Query. Did the chilling of this queen cause her eggs to hatch entirely black bees?

But I have already spun my yarn as long again as I intended when I began, and will close by wishing success to the BEE JOURNAL.

J. E. BENJAMIN.

Rockford, Iowa.

[For the American Bee Journal.]

How to Cleanse Mouldy Comb.

A mouldy comb, if not rotten, may readily be cleansed in the following simple manner: First, hang it up till it is thoroughly dry; then brush off as much of the mould as possible without cutting or mutilating the cells. When so prepared, put it right into the cluster of a strong stock of bees, in the working season, and in the course of a week or so the bees will usually cleanse and renovate it so completely that, to all appearance, its former mouldiness will be gone. If, however, a portion of the comb should contain bee-bread that has become hardened and turned white in the cells, this the bees will sometimes fail to cleanse, or will occasionally cut away the entire cells instead. In either case of failure, such portions should be cut out and the vacancy filled with worker comb, to prevent the bees from building drone cells instead.

By the above method I have had some combs cleansed that had been literally covered over with mould. For the want of a better place I have, for the last fifteen years, usually wintered some of my bees in a damp cellar; hence my experience with mouldy combs.

Permit me to correct the following error in a previous communication. The cleats on side No. 2 of my common entrance-blocks to the Langstroth hive are three-sixteenths of an inch thick. The types makes me say "the sixteenth of an inch thick." See page 118 of the December number of the present volume of the Bee Journal.

HENRY CRIST.

Lake P. O., Ohio, Jan. 4, 1870.

* * *

[For the American Bee Journal.]

Experience of Another Beginner.

DEAR JOURNAL:—I will now contribute my first effort for your numerous readers, giving my experience in bee-keeping. In 1866 I purchased five colonies (black bees) of one of my neighbors, I furnishing the box hives. In the following winter two of them died, leaving me three stocks for a start in 1867.

Being a novice in apiculture, I was puzzling my brain how to proceed, for failure was the general cry with the most of those who were in the business, and who were using only the common hive, or, worse still, some worthless patented substitute. While in this state of mind, I read in the *Chicago Tribune*, a communication from "RURAL," giving an account of his visit to the apiary of J. M. Marvin, of St. Charles, Ill., describing his mode of management, the Langstroth hive, and the Italian bee. I immediately visited Mr. Marvin, who received me very kindly, and I am much indebted to him for valuable information in the treatment of bees. He used the Langstroth hive, and had about three hundred colonies, mostly Italians. That season, I think, he discarded the blacks almost entirely. There I saw the Italian bees for the first time. I purchased from him an Italian queen and six Langstroth hives; came home; divided my three colonies—thus increasing them to six, all in Langstroth hives. The following winter I put them in my cellar, and they came out all right next spring. In 1868 they increased to twelve stocks; but only four of the twelve gathered sufficient stores for wintering. One of them died before I discovered their weakness and want. The seven weak swarms I brought through by feeding. On the first of January, 1869, the weight of the eleven stocks, exclusive of their hives, was respectively as follows: 30, 30, 22, 21, 14, 11, 11, 10, 9, 9, 8 lbs. So with these eleven Italian colonies I began this year; they using up about a bushel of rye flour and oatmeal in March and April.

Now for the result. They gave me one thousand and twenty-five (1025) pounds of surplus honey, and sixteen new swarms. My twenty-seven colonies are nicely put away in my cellar, all right. I am a regular subscriber to the AMERICAN BEE JOURNAL, and it *pays*. More anon.

W. W. HENRY.

Mendota., Ill., Dec. 1869.

* * *

[For the American Bee Journal.]

Novice.

DEAR JOURNAL:—Our bee house is of course inhabited by this time, by half a million or so of our little yellow pets, and we are happy to say that, so far, it answers the purpose admirably. We put them in on the 20th of November, and as the weather was since, we feel sure that it would have been a great gain to have housed them about a month sooner. The day we put them in happened to be quite cold, and as we did not want the caps on, we left them on their stands. Most of the stocks behaved quite well; but two of the hybrid colonies made up their minds evidently that they would stay where they were. They had been extremely cross all the season, and that day *positively objected* to any assistance of any kind. From one of them we removed the honey-board, thinking that the freezing air would drive them down among the combs; but after leaving them thus till after all the rest were removed, we decided that they must be treated like refractory children, and put in by main strength.

We are not in the habit of being intimidated by bees, but the battle array on top of the frames was rather fierce-looking; and when we approached they came more than half way to meet us, like a young hailstorm. Smoke was of no use then, as they seemed to be all out of the hive before we got within ten feet of them; yet we tried it, and think that, for almost the only time, the fumes of tobacco seemed to have no terrors for them. We might smoke them until they lay on their backs, and the moment we stopped blowing, they pitched in with fresh vigor, and finally, when we lost all patience, and carried the hive in, and let the bees come along or stay as they liked, we had about the fairest exhibition of real hybrid bee *fury* that perhaps is ever displayed. They buried themselves in our shoes, trowsers, coat, vest, hair, collar, waistband, and everywhere else. They did not any of them get lost, as they were so busily engaged in bestowing their whole attention to our precious self. Thus we all got into the bee house; but instead of taking their places orderly in a row, as we had planned they should, and *very particularly desired they should just then*, they kept pitching in more furiously than ever, until we began to think we should a "leetle rather" take a "back-seat," and be a spectator awhile.

Well, these bees raised such a "howling" that we really began to fear that our bee-house was going to be anything but quietness; and the other colonies seemed to be rapidly getting demoralized as well. We left the door open on cold nights, until the thermometer went down almost to freezing; still they persisted in promenading constantly on the tops of the frames, and scolding away worse than a lot of "setting hens."

We read Gallup, but he advised more ventilation; and as we had the honey-boards off of the worst stocks, and the entrances all open, we did not know any better way to ventilate, unless we put them in the middle of a ten acre lot, with the bars down.

Finally, our business became so pressing at the approach of the holidays, that we positively had no time to see to the bees. (We had been visiting them once or twice every day.) And after they had been *neglected* about a week, we were surprised to find them quite orderly, although the cross rascals did "boil out over the top," as soon as we showed our phiz. (We are not bad-looking at all, Mr. Editor, as you will see by the photograph which we are going to send you, when we get a little older *in bees*.) We then went off in a huff, and shut them up in total darkness, for not having any better appreciation of our kindness to them.

Since then we have slipped in quietly about once a week, and for the last four weeks the thermometer has not varied one degree from 40°, although the weather outside has been cold and warm alternately; and once so warm for several days, that we could hardly understand how it could be so much colder inside. We do not think the sun produces any effect at all on the interior. The bees, in most of the hives, behave just as Mr. Gallup describes them. Were it not for their bright colors, and their moving when touched, we might think them dead.

Mr. Adair and some others, we think, claim that bees cannot be taught anything. Is not this a mistake? If they can be made cross, cannot they as well be made tame? Again, cannot they recognize their keeper? We have often had them taught to fly to us and light on our fingers, for honey which they had been in the habit of finding there; and a very few lessons of that kind will suffice to make them remember it for some time. We succeeded so well in arousing the ire of the colony mentioned, that they did not get over it for some weeks. Could they not be induced to remember kindness as long? Perhaps they would too much resemble human beings in that respect; yet we feel certain that we can, by direct experiment, show that bees recognise one person from another, and shall try something of the kind next season.

We should have remarked that our bees, so far, have consumed very little honey. With so little action going on among them, we do not see how they can eat much. It may be argued that there is consequently little brood being raised. This, we think, may be so; nor is it necessary there should be, for we have no bees dying off, as they do when kept out of doors—at least we do not discover any.

We always have, and fear we always shall "count chickens before they are hatched." So here goes: With forty-six stocks, having lots of bees and plenty of honey, won't we have an array of laborers in the spring? And won't we ——— then! There, it is eleven o'clock at night, and we had almost forgotten that we are as yet only a NOVICE.

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[For the American Bee Journal.]

Responses and Remarks.

I have been repeatedly asked by correspondents, how is it that your doctors, (meaning bee doctors, of course,) disagree so much on various points? Whereas, the fact is we do not disagree so much as some suppose.

Mr. J. H. Thomas says, on page 228, vol. 4, No. 12, "If Gallup will quietly lay his piece of wire cloth over his bees, he will find what I say to be true." Now, the truth is, Mr. Thomas uses a different form of hive from mine, and lives in a different climate. I usually have more than half of my swarms so full of bees, that when I set them in the cellar, I raise up the hive at the bottom, on the front side an inch, and remove the honey board entirely, before I can get them in the semi-dormant state he speaks of. Even then the bees will be clustered from the bottom board up, and crowded on the top of the hive about an inch thick. After trying the wire gauze on a few such colonies, and destroying them as I have done, and at the same time wintering others with perfect success without the wire gauze, he would be very apt to come to my conclusion.

Vol. 5, No. 1, page 14, C. D. says, "Gallup's system of inside wintering, &c., applies to steady cold winters, and not to a changeable climate." It, however, does apply to a changeable climate, for our climate changes from 75° above to 30° below zero, in mid-winter. But the cellar must be properly ventilated, as well as the hives.

On page 15 of the same volume and number, C. F. Smith thinks "Gallup is mistaken," &c. But Mr. Gallup proves that Mr. Smith is mistaken. He has misquoted Gallup. I said that where bees did not have access to buckwheat they had died, (or, in other words, the disease has prevailed;) not that *all* had died. Putting in that word (*all*) alters the meaning altogether. My own bees did not have access to buckwheat, yet I wintered every swarm. But where they did have access to buckwheat, or were fed, in every instance that came under my observation, they were in excellent condition; or, in other words, there was no bee disease. Mr. Adair, in his Annals of Bee Culture, attributes the disease to diseased or decayed fruit, in his locality. That could not possibly have been the cause here, as we have no fruit of any description for the bees to meddle with.

On page 10 of the same volume and number, Mr. H. M. Thomas asks a question, and I answer—yes, I have observed at least a dozen cases of the kind in my experience. I had one case last winter.

Mr. Aaron Benedict calls Gallup to task, in one of the back numbers of the Journal, and others have called him an old fogy, &c. Now Gallup never said, or intended to say, that there could be no improvement in hives. But he cannot see the necessity or propriety of having those improvements patented. Why not give the benefit of those improvements, if they are improvements, to the public free of charge? In many cases, those so-called improvements are yet disputed questions; and many of them, (I do not say all,) look to me like mere quibbles to avoid Mr. Langstroth's patent. In a great majority of cases, the advantages claimed are only imaginary. Take, for example, the Diamond Hive. The advantages claimed over Mr. Langstroth's original pattern are real, without a doubt in my mind. Yet with the form of Langstroth hive, which I use, and with my method of managing it, the advantages would scarcely be perceived. But put a swarm in each, without any after care whatever, and I do not doubt that in a majority of cases the Diamond Hive would excel, especially in increase. But that kind of bee-keeping is, or ought to be, played out.

E. Gallup.

Osage, Iowa.

[For the American Bee Journal.]

Stimulative Spring Feeding.

Mr. Marvin:—Will you be so kind as to give us your plan of stimulative feeding bees; giving the time of commencement, the quality of food, how often and what quantity at a feeding, and at what time of day you feed? Do you feed rye meal, and if so, how large a quantity, and at what time is it given? On how small a quantity of honey may a medium stock of bees winter, in the house, or in a cellar? I am of opinion that there is more in this feeding business, than is generally supposed or dreamed of by most bee-keepers. Be so kind as to post me in detail, either through the Bee Journal or by letter.

E. R., *Wayne, Mich.*

It requires at least five pounds of honey to winter a stock of bees, containing an old queen, or one that has had work during the season, as she needs rest, and is not easily fattened, ready for the renewal of egg-laying; but the hive will bear to be looked to often on that allowance. A stock containing a young queen is not safe without constant watchfulness, and probably double the quantity of honey may be needed before spring, as the queen requires no rest, having done little or no work. It requires at least ten pounds of honey or feed, to sustain a hive of bees till spring in this section; and they should be watched closely, on that allowance, to see that they are not robbed, or need more before the flowers yield enough.

It will pay to feed a stock of bees all they can eat, but not all they can store, unless you can sell bees at a higher price than we can, at present, in this section. When the bees are taken out of the house, or spring opens, place dishes of unbolted rye or oat-meal in the apiary. If the neighbors have bees, and do not feed or care for them, and their stocks carry away half a pound, each, every working day, for five or six days, its equivalent will probably be brought back in honey, sometime when their stocks need the proper protecting care of a watchful bee-keeper. Some stocks do not need the feed, and some seasons no stocks need the artificial feed, and cannot be induced to take it at all. If any hive or hives need bee-bread, and the weather is bad, feed a mixture of diluted honey and rye, or oat meal mixed, or either separately; also, the middle of hard-boiled eggs mixed to a paste. Feed in a piece of old comb placed on the frames, or near the cluster of bees. Disturb or examine them often enough to have them eat all the feed given to them, and all they have in the hive; but do not let them lack food for even one day, as that would nearly spoil all the previous work, and involve the loss of the feed. Better have some stored, than have too little, as there may be a rainy day at hand.

A good liquid feed for spring use, need be only half and half sugar and water. The better the quality, the less odor to attract robbers. But as we feed only near night, and only what is secured by the bees of the hive fed, and all hives are equal in number of bees, it is not necessary to have more than a medium quality of sugar, as that is nearly as good for immediate use, and we want little or none stored in the cells, because we desire to have young bees raised in them. We want each hive of bees to eat, after being regulated for feeding—that is, by cleansing out the hives, equalising the bees, combs, and brood, and elevating the front end of the tight-bottomed hives, so that they will hold the feed poured in from the kettle in which it is boiled. As we boil the feed to the consistency of half sugar and half water, it runs under the combs, and the bees can stand on each side of the comb-frames and sides of the hive; and inside workers, as well as outside honey gatherers can and do clean up the spilled feed *instanter*. We have the best success by having the bees feed from the bottom of the hives, standing on their own combs, unless the air is too cold; then turn the feed directly in the cells out of a sprinkler, or a teapot. As we feed fifty or a hundred stocks half a pound each, every evening, the teapot or other feeders are too slow for us. If a hive takes less feed, we give it combs of brood, or bees from some other hive that can spare them. If there is a yield, or a partial yield of honey in the flowers, feed accordingly.

Next spring we shall have to disturb our bees, and feed them out of their own stores, to make room for young bees in the cells now occupied by honey and bee-bread. It is done by opening the hives often, uncapping a portion or all of the cells, as the case may be, and sometimes feeding diluted honey or feed. If there is any honey to interfere with brood-rearing, use the honey-emptying machine, and then feed the honey again, or its equivalent in feed, if needed.

It is best not to feed bees to stimulate breeding, unless it is carried out *until there is enough feed to be procured from natural sources*, the flowers, and those are continuous long enough to make it pay. We used to aim to have our stocks extra strong only at the yielding of the clovers and bass-wood, (linden ;) but the increase of fruit-blossoms and dandelion (*taraxacum*) the last two years, has induced us to save the old bees and get the stocks on the swarming point, at least a month earlier. We want the experience of others on this branch of bee-keeping; and more on the hotbed and forcing house, or outside heating arrangements, as we have had but few experimental trials on outside stimulating; but enough to convince us there is profit in it, if properly managed.

We hope our friends will be kind enough not to pay Uncle Sam sixty dollars, or less, for a patent, when the probabilities are that half that sum cannot be obtained again, clear of expense. The word *patent*, keeps many from investing, or even making any improvement, for fear of infringing on some one's right. Had the honey-machine been patented, it would have kept the bee-keepers back at least ten years, and no person would have been benefited more than they may be now, by accepting and keeping up with the improvements made. We know of but few patents that pay to educate the buyer how to use them with success; and without such knowledge acquired, they do not generally succeed, till they have used up one or more of the articles, or got discouraged—saying the article is of no use, and thereby discouraging others from investing, to the detriment of the inventor, and the great disadvantage of the public.

J. M. MARVIN.

St. Charles, Ill.

[For the American Bee Journal.]

Trouble with Queen Cells.

MR EDITOR :—Will you, or any of your kind and numerous correspondents, tell me whether queen cells require to be inserted in the same position again as they were before removal, and how they should be fastened. The information would be important to me as well as perhaps to many others. Up to this time I never could find anything in any writings on apiculture very precise on this point. It is true, some state that the bees will sometimes destroy such inserted cells, and others again say that the bees will foster an inserted cell. Now, both these points have failed with me, but I am more particularly interested in the latter.

On examining a colony, I found that it had lost its queen sometime previous, as it contained queen cells sealed over, but neither eggs nor larvæ in the cells—nothing but sealed worker brood. I removed all the queen cells, as I had some sealed Italian queen cells in a nucleus box, and the colony I am speaking of were black bees. I took out a comb, cut a hole in it, just fitted to receive a queen cell taken from the nucleus box, and adjusted it nicely, so that, in fact, it fitted as naturally as if placed there by the bees. But these soon gnawed away all around it, so that I expected to see them make a still better job of it. But lo! they soon brought it to the bottom of the hive, and there, surrounding it, acted as though they did not mean to destroy it. So I took up the cell, and first cutting a little wedge out of the comb which held it before, cutting downward from the opening made by the first insertion, and put it between the crotch. The cell was now clear above and below, and attached only by its sides, as when cutting it out I had left it encircled by a course of worker cells. The bees acted just as before, and soon got the cell down on the floor again, though without mutilating it in any way. I was now almost at my wit's end; so I took up a piece of comb, three inches square, and cut out a hole to receive the cell again. After inserting it I had a wire-cloth cage so made that, put in the piece of comb with the cell, it just filled the cage, except leaving sufficient space for the bees to get to the cell between its sides and the comb surface. I now thought if the bees act as before, the cell will at least not fall to the bottom of the hive. They really did gnaw till the cell reached the bottom of the cage, by which time it was discovered that the inmate was dead, caused, I suppose, by the fall it received. I then procured another, and to keep it from falling also, I caged it in the same manner as before, leaving the narrow side open for the access of the bees. These acted as on the former occasion, gnawing away portions until they could go no further. Sometimes they would have the cell laying on its side, and then again standing on its end. In fact, they kept rolling and rocking it constantly, yet never mutilating it in the least, till the time when its inmate should have left the prison. It was then found to be dead. I now tried a third time, with no better success.

All this is, to me at least, exceedingly strange. Is there any special mode of introducing a queen cell that will *always* prove successful? If so, I should be very much gratified to be instructed how to do it, for future use. After these repeated failures, I gave the bees a piece of broad comb, inserting it in the same opening where the first queen cell was placed; they immediately fastened it well, and proceeded to rear a queen. Why would they not foster and use the sealed queen cell that was offered to them?

C. WURSTER.

Kleinburgh, Canada.

[For the American Bee Journal.]

Sugar Candy.

In the BEE JOURNAL for December, D. H. Coggshall inquires how sugar candy should be made for feeding bees. I always buy the common sugar sticks, sold by confectioners.

LIQUID BEE FEED, OR SYRUP.

I consider a thick syrup made of white sugar, fully equal to honey for bee-feed.

J. H. THOMAS.

Brooklin, Ontario.

Bees have about sixteen thousand eyes, or eight thousand in each of the compound organs placed laterally upon the head.

[For the American Bee Journal.]

Musings of the Evening.

The honey bee must be one of the special blessings conferred by God upon man; for we learn that when He, in infinite wisdom, did provide the means of salvation for His fallen creatures, He provided for John, the forerunner of Christ, the means of subsistence from the treasured stores of this most wonderful insect. Thus we read: "and his meat was locusts and wild honey." How conclusively does this show that the bee performed a noble part in consummating the plan of redemption!

The bee possesses many characteristics worthy of the imitation of man. It teaches lessons which, if obeyed, will advance man's interest morally, physically, mentally.

Morally, for the bee is an observer of every law given it by its Creator. *Physically*, for nothing so small is capable of laying up in store for the use of man so delicious a food; and its rights it defends with a power and skill that would astound any one unacquainted with the nature of this insect. *Mentally*, for in all her labors the bee manifests great wisdom. First, she gathers nectar from the flowers, secretes it through the pores of the skin, and thus forms scales of fat or wax, which, taken in small particles, is put together in a mechanical manner that defies the art of man; raising the temperature to eighty degrees Fahrenheit, and the pieces are sealed together into what is called *comb*. This most wonderful task completed, they next turn their attention to their mother; with some of this same nectar or saccharine matter mixed with the pollen of flowers, and partially digested in the stomachs of the female worker-bees. With this the mother is fed directly from the proboscis of the workers. Thus fed, her fertilized organs of reproduction stimulated by the food, she produces eggs just in proportion to the amount of food taken. See with what judgment the eggs are warmed and hatched, and the larvæ fed. Of the same eggs they are able to make some to "honor and some to dishonor." That is to say, they can feed the larvæ from one egg on a compound food, which makes that so fed to grow large, fully developing the female organs, and thus, in the imperfect judgment of man, entitling it to the name of "queen." But the name slanders the character of the mother bee; for in no case does she attempt to assume the position of a *dictator*. She simply assumes the duties of a mother, and is at all times and under all circumstances entirely subject to the will of the populace. The larvæ from another egg they feed on a different or less nutritious food, and sealing up the embryo in a cell that dwarfs it, or prevents the full development of the female organs. Hence the worker-bee is not capable of being fertilized, and is thus nominally no mother, but destined to be a servant of the household for life, which position she cheerfully accepts.

How like unto man, too! Nothing seems to afford so much pleasure as the storing up of treasure!

But, to their credit, be it no longer said that theirs is a *monarchial* government, for, among them, numbers universally rule, even to the putting to death of one that all creatures hold dear—the *mother*. They do not even suffer their own fathers to live, when their presence does not add to the wealth of the community. Still, the many lessons of industry and of mechanical ingenuity, together with their strict obedience to each and every law which God has given them for their government, are worthy the admiration and imitation of the most devout theologian or the profoundest philosopher.

JAMES D. MEADOR.

Independence, Mo.

[For the American Bee Journal.]

Wintering Bees.

MR. EDITOR:—As the winter season approaches, (and in fact it has been freezing with us ever since the middle of October,) it reminds us to look after the care of stock, to see that they have comfortable quarters, with a supply of food at command, because we understand that animal heat is kept up at the expense of food and exercise. Now, if we give them proper protection when not in exercise, they will require proportionally less food to maintain the required heat. This rule holds good with bees as well as other stock; and if they are weak in numbers and light in stores, they must certainly perish, here in the North, if they are not protected.

I became practically convinced of the advantages of protecting bees from cold, in the winter of 1866. Among my stock were eight stands in the American hive. The Bees, comb, brood and honey in them weighed only from six to eight pounds to the hive—the heaviest not exceeding ten pounds in weight. No practical bee-keeper should ever allow his bees to commence the winter so light as this, but I was then more engaged in medical practice than in apiculture, and had not watched them as closely as I should have done. I knew from former experience that they were too light to winter on their summer stands; but what was I to do? My village lot was too flat for a cellar, or even to trench, as Mr. Langstroth describes in his valuable work, so I did what any Yankee would do under the circumstances, that is, *I did the best I could!* I levelled the ground in a part of the garden, laid down two pieces of 4 by 4 inch scantling, eight inches apart, filled the space between and each side of them with straw, to absorb the moisture from below, set the eight hives on the scantling, close together, with cups and surplus boxes removed, and entrance open; drove a board into the ground at each end of the row of hives; laid a pole on top for a ridgepole, set boards slanting from the ground to ridgepole, each side; put a little straw over the boards to help shed the water, and covered all with dirt from six to ten inches deep—leaving the space around the hives under the boards vacant. I put them into these winter quarters Nov. 25, 1866.

They remained undisturbed until the third of January, when, it being quite warm for a week, I was anxious to know how the bees were getting along; so I opened one end of the cave and crawled in. All was still as death, and I concluded my bees were surely dead; but when I rapped each hive they quickly responded. A truant mouse had tried to gnaw into the entrance of one hive. I supposed he was hungry and wanted something to eat; so I prepared a dish of *corn meal and arsenic*, and for his convenience, lest he should be thirsty after dinner, I set a dish of water handy, and closed the cave again. The bees were left thus till the 20th of March, when the frost was all out of the ground, and my other bees flying lively. I opened the cave, all was quiet; but the bees soon run to the door to see if it was indeed daylight. I set them on their summer stands, all alive and well, with combs clear of mould and in good order. Two large rats and about a dozen mice had dined on the prepared meal, and laid down to rest.

As the bees were gathering pollen from the willows and elms, I did not have to feed any in the spring to get them through. They filled up their hives during the summer, and were strong, heavy stocks in the fall, with nearly as much box honey as any of the rest of the hives.

I was satisfied that protection had saved these bees. I therefore, the next winter, built a house, fourteen feet by eighteen, weatherboarded and ceiled, with a ten-inch wall filled in with sawdust, floored overhead, with ten inches sawdust on top, and carpeted with four inches of sawdust. Two ventliating pipes, four inches by six, were inserted —one from the upper floor up; the other from top of sawdust, over the upper floor, down to within a foot of the bottom of the room. In this room we kept our canned fruit, apples, potatoes, cabbages and bees, for the last two winters, with success. I have just put them up in it again for the winter, except a few hives which I have left out for experiment. I am satisfied that protection pays.

Now, Mr. Editor, if you think this article will add anything serviceable to the already large correspondence in the JOURNAL on protection in winter, and thereby induce other *novices* to house or cave their bees during the cold weather in the North, you can put it in print if you like. So, hurrah for protection, the AMERICAN BEE JOURNAL and the successes of 1870! Enclosed find the needful for three old and three new subscribers.

A. V. CONKLIN.

Bennington, *Ohio*, *Nov*. 1869.

* * *

The entire economy of the hive seems to emanate exclusively from the two most prominent attributes of instinct—that of self-preservation, and that other more important axis of the vast wheel of creation, the secured perpetuation of the kind by the conservative and absorbing love of the offspring.—*Shuckard.*

* * *

"If you listen by a hive about nine 'colock, [on a summer evening,] you will hear an oratorio sweeter than at Exeter Hall. Treble, tenor, and bass are blended in richest harmony. Sometimes the sound is like the distant hum of a great city, and sometimes it is like a peal of hallelujahs."—REV. WM. C. COTTON.

[For the American Bee Journal.]

Bees in Jefferson, Wisconsin, in 1869.

I commenced wintering out the stocks of my home apiary on the 28th of March. They had, all of them, consumed a very small amount of honey, and came out nearly as strong as when put in the cellar. In most of the hives no brood was found, and those that had any, had very little. On the 3d and 4th of April a cold snow storm occurred, with a spell of cold weather for three or four days, during which time one of my strongest colonies perished for want of honey near the cluster, though having plenty of honey in the hive. This was the fourth colony I had lost out of three hundred and sixty-five, since wintering them in. Good, warm weather did not set in till the 16th of April, and a few days later the bees commenced bringing in some pollen. Between the 6th and 12th of May, large numbers of workers hatched, and everything relating to bees gave promise of a good honey season. On the 10th of May I found some colonies that had their hives full of honey, brood, and bee-bread to the last cell. They were very strong, and had built queen cells, so that it was evident they could not keep together long. But the weather became unfavorable again, and the bees could gather little from the blossoms of hard maple. On the 20th the weather changed, and the fruit blossoms furnished fine pasturage for the bees. My first swarm issued on the 29th, and on the 3d of June I had three more swarms. Nearly all my colonies had become strong by this time, and I had reason to expect numerous swarms. White clover never appeared more abundant, and was just getting into bloom, and there were fourteen acres of Alsike clover sowed within half a mile of my apiary which was also just beginning to blossom. Nearly every colony had a good supply of old honey, besides some lately gathered. If ever things looked promising, it was now, but, alas, the prospect suddenly changed. Cold wet weather set in, and rain fell on twenty-three days in June. Neither white clover nor Alsike yielded any honey. The swarms I got during the month of June had to be fed continuously to keep them from starving. They could build no combs, and all the progress they made was in rearing some brood in the combs I had given them. The stores of honey in the hives gradually disappeared, and about the 10th of July—the time when the basswood usually begins to bloom—I had to feed nearly one-half of my old colonies to keep them alive. But as all my stocks were quite populous by this time, I had not lost courage yet—the basswood might yet supply sufficient winter stores to my hungry colonies. There were, however, only a small number of trees that blossomed, and those yielded honey abundantly only one day, and less abundantly for only two days more. With the failure of the basswood blossoms vanished all prospect that the bees of my home apiary could gather a winter's supply. On examining a large number of colonies I became satisfied that not one had secured stores enough to carry them through the winter—having less than five pounds of honey per colony. It was now evident that I would have to resort to some extraordinary means for their preservation. I concluded to do what I had never done before, namely, remove to different locations a large number of colonies. I hunted up buckwheat fields and commenced hauling one hundred and six colonies to the town of Oakland, half a mile from my home, where about sixty acres of highland had been seeded with buckwheat. There were about thirty-five colonies of bees in this neighborhood before. With the exception of six colonies, those which I took from home from the 6th to the 10th of August, had gained on an average fifteen and a half pounds in weight when I brought them back on the 20th of September. The last six colonies, which were taken there on the 24th of August, were the only ones that had not gained anything. Some very strong colonies gained more than thirty pounds in sixteen days. Fifty-seven colonies which I hauled to the town of Aztalan, northwest from my residence, and which had over twenty acres of buckwheat to work on, gained only on an average about seven pounds per hive. Most of the buckwheat here was sowed on low ground, and one day when looking after the colonies, I was surprised to see nearly all the bees flying in the direction of a four-acre lot sowed on high ground, while only very few of them went to the fine ten-acre field. The soil of this field was heavy clay; another parcel, of fifty-seven colonies, carried to a location only three miles west of my home, which had not much buckwheat to work on, gained about eight pounds per hive, on an average Of this lot, as well as of the former one, some hives had lost in weight,—the highest gain by any hive was seventeen pounds in the one lot, and eighteen pounds in the other. Twenty-five colonies, taken to the town of Hebron, about five miles from my home, in a southeasterly direction, set out in lots of ten and fifteen hives respectively, gained about eleven pounds per hive, on an average. Twenty-nine other colonies, removed three and a half miles, in an air line, south from my home apiary, and placed in the neighborhood of three acres of buckwheat and a large patch of thistles, gained eight and a half pounds per hive, on an average. Nine of these were removed thither on the 24th of August, and had not increased in weight. The average gain of all the colonies removed was ten pounds per hive, making a total of twenty-seven hundred and sixty-nine and three-quarter pounds, ascertained by actual weighing. The time spent in removing them and bringing them back was nearly four weeks, employing two men with a horse and wagon. Three colonies were smothered while being transported, as, in order to expedite the removal, we kept on hauling in day-time, in very hot weather, and those colonies were exceedingly populous. The bees clustered thickly on the wire gauze in front of the portico, creating immoderate heat in the hive and thereby melting down the combs.

By this experiment I have found that there is in different localities much difference in the yield of honey from buckwheat blossoms; that, at least in this season, it yielded most honey on high ground, particularly in sandy soil; that a distance of three or four miles may change a location from a poor to a good one; and that it pays very well to distribute colonies in various directions at a time when the pasturage is or is expected to be scant in proportion to the number of colonies to be supplied.

On examination of a number of colonies after bringing them home, I found that the strong ones had nearly all sealed honey, while the weaker had theirs mostly unsealed. Some of the latter lost nearly nine pounds each in weight from September 20th to November 10th; whereas none of the strong ones with sealed honey lost over five and a-half pounds. This loss was, of course, not all honey, as all the colonies had a considerable amount of brood when brought home; and the greater loss by the weaker ones was doubtless occasioned by the thin unsealed honey.

After feeding three hundred pounds of rock candy and two hundred pounds of coffee sugar, and uniting about thirty colonies, I think the two hundred and eighty-eight colonies of my home apiary have food enough to serve them till May. Then, if necessary, I shall feed them with honey, a supply of which I have still on hand from my last year's crop. I fear, however, that those colonies which I have been feeding will be troubled with dysentery, and that some of them may die before spring comes on, as they appear very uneasy at the present time, and the bees of some of them now discharge fæces outside the hive. This feeding was by way of experiment, which I hope I may not be compelled to repeat at any time during my life. I really do not believe in wintering bees that have not food enough in the fall to last them to the first of May.

While compelled to make so poor a report about the bees of my home apiary, I feel happy to say that those of my southern apiary are in much better condition. They not only needed no feeding last summer, but were constantly gaining a little in weight; so that, with the surplus which some of them gave, I could winter in every colony that was strong enough and had a good queen. I had one hundred and seventeen colonies in that apiary in the spring, and have wintered in one hundred and seventy-seven. The increase in number was nearly all by natural swarms.

One hundred and twenty-two colonies which I had in my northern apiary in the spring, increased to one hundred and eighty-nine—all of which I have wintered in. With the expenditure of about one thousand pounds of honey since spring, this lot is in a fair condition to winter. Twenty-eight additional colonies, which I keep in the town of Oakland, seven miles from my residence, are also in very fine condition for wintering.

Adam Grimm.

Jefferson, Wis.

* * *

It often happens that flowers which even contain within themselves the means of ready fructification cannot derive it from the pollen of their own anthers, but require that the pollen should be conveyed to them from the anthers of younger flowers. In some cases, too, the reverse of this takes place.

Bee Hives, &c., Patented in 1869.

Patentees.	Date of Patent.	Invention.
A. T. Wright	Jan. 5,	Bee hives.
Theron Webb	" 12,	" "
A. T. Wright	" 12,	" "
Jno. Wood	" 12,	" "
B. F. Lee	" 19,	" "
C. R. C. Masten & A. D. Van Vleck	" 19,	" "
T. S. Engledow	" 19,	" "
Wm. Black	" 26,	" "
Jesse Pearson	Feb. 2,	" "
James D. Meador	" 2,	" "
David S. Gray	" 2,	" house.
James A. Cameron	" 9,	" hive.
A. S. Layton	" 9,	" "
R. P. Buttles	" 9,	" "
J. C. Gaston	" 16,	" "
G. J. Flansburg	" 16,	" "
James P. Praul	" 16,	" "
Peter Miller, Jr.	March 23,	" feeders.
J. J. & A. J. Frey	" 23,	" hives.
G. W. Umbaugh	" 23,	" "
T. F. McCafferty	" 30,	" "
Ole Osmundson	April 20,	" "
James H. Crandell	" 20,	" "
Jno. E. Finley	May 4,	" "
Chas. E. Spaulding	" 11,	" "
Thomas Atkinson	" 11,	" "
N. B. Sebring	" 18,	" "
R. B. Starbuck	" 18,	" "
J. B. Farquhar	June 1,	" "
M. Easley	" 1,	" "
James M. Robnett	" 1,	" "
J. H. Bassler	" 8,	" "
E. B. Redfield & E. C. Hubbard	" 15,	" "
H. Berix	" 15,	" "
Jno. E. Finley	" 15,	" "
Solomon Stevens	" 15,	" "
Geo. Calvert	" 22,	" "
D. G. Watt	" 29,	" "
Jos. Croner	" 29,	" "
J. A. Paddock & J. S. Estep	July 6,	" "
S. Vreeland	" 20,	" "
G. A. Robinson	" 27,	" "
H. Filsom	" 27,	" "
M. Graham	" 27,	" "
R. S. Torrey	Aug. 3,	" "
Richard Pearson	" 3,	" "
Thos. Atkinson	" 10,	" "
Saml. B. Crawford	" 10,	" "
D. Collum	" 31,	" "
H. M. Dunham & B. Addington	Sept. 7,	" "
H. H. Flick	" 21,	" "
E. N. Shedd	" 21,	" "
L. H. Critchfield	Oct. 5,	" "
H. O. Peabody	" 26,	Centrifugal machines for extracting honey from the comb.
D. Burbank	Nov. 9,	Bee house.
G. W. Lowery	" 9,	Bee hives.
Riley Sanford	" 23,	" "
Jewell Davis	" 23,	Hives for raising queen bees.
W. A. Elam	" 23,	Bee hives.
R. P. Buttles	" 23,	Bee moth instrument.
H. O. Peabody	Dec. 7,	Centrifugal machines for extracting honey from the comb.
Peter Campbell	" 14,	Bee hives.
W. T. Kirkpatrick	" 14,	" "
Thomas L. Gray	" 21,	Miller trap for bee hives.

[For the American Bee Journal.]

Bees North and South.

1. In what latitude in the United States does the bee do best—that is, collect most honey, and of the best quality?

2. Why will bees not collect more honey in the South where the season is longer, than in the North? I have the general impression that their instinct to store honey south, is only for their present wants—that is, they do not lay up stores for winter as in the north. Is this so?

3. Why is it that the largest apiaries in the United States are north of latitude 40°—such as Quinby's, Grimm's, Marvin's and others? Will those who have experience in different latitudes answer through the Bee Journal, and oblige.

West Groton, N. Y.

D. H. Coggshall, Jr.

[For the American Bee Journal.]

Italian Queen and Alsike Clover.

For the benefit of the public generally and the encouragement of M. J. H. Townley, of Tompkins, Michigan, I would say that having dealt largely with him in the purchase of Italian queen bees, I am satisfied that they are bred from the purest and most reliable stock in the United States, being second to none. I have purchased also from various other breeders, all of whom have pure stock, but have not been more satisfactory served by any than by Mr. Townley.

I have also bought from him more than a hundred pounds of Alsike clover seed, out of which I sowed eighteen acres, selling the balance to my neighbors—all of whom pronounced it to be the genuine article, free from any foul seed whatever.

As Mr. Townley is strictly honest and very prompt in dealing, orders sent to him will no doubt be properly filled, and purchasers find that they have made a good investment.

O. E. Wolcott.

Byron, Mich.

◆

Antonine the Martyr, in the seventh century, speaks of the honey of Nazareth as being most excellent; and in the present day, bees are extensively cultivated at Bethlehem, for the sake of the profit derived from the wax tapers supplied to the pilgrims.

[For the American Bee Journal.]

A Cheaper Bee House.

Mr. Editor:—I have just been reading the January number of the *Bee Journal.* I think Novice's bee house is so expensive that very few persons will be induced to put so much money in so small a building. My brother and I built one last fall, ten feet by twenty-one inside measurement, eight feet high in the cellar part, with shelving to contain one hundred and twenty stocks of bees, and a shed overhead six feet high in the clear, in which to store out empty hives, caps, &c. The entire cost of it was less than twenty-six dollars. We did all the labor ourselves. We have now in it more than one hundred and twenty colonies of bees, in tip-top condition.

The past season was the poorest ever known in this part of the country. More than half the bees will starve to death. Natural swarming commenced very late, and after the 15th of July I do not think the bees gathered as much as they used from day to day.

I swarmed my bees artificially, and as soon as the pasturage failed I stopped. We increased our stocks about one-half, and have had the largest share of surplus honey that has been taken in this county. We use the shallow form of Langstroth's hive. I have examined several hundred stocks, in different styles of hive, this fall, and have found none that are near as heavy as those in the shallow form.

Henry S. Wells.

Lisle, Broome Co., N. Y.

[For the American Bee Journal.]

Experience with Foulbrood.

Several years ago I purchased two stocks of Italian bees of a man in the State of Maine, for which I paid him forty dollars. They were in Langstroth hives. I opened both hives after I received them, as I was anxious to know what kind of a bargain I had made. On removing the top board I detected a peculiar smell, such as had never come in contact with my olefactory nerves before. Although I had never seen a case of foulbrood, I at once pronounced the two hives infected with this disease.

It was then early in the month of June, and I let the bees work, to see what would be done. I examined them every day, to ascertain how the disease was progressing. The stench grew more intolerable, as the disease spread in the combs. I did nothing the first year to check it from spreading. Early the next spring, I opened my hives, to see if the disease was still there, and of course found that it was, and quite as much so as ever. Very little brood was to be seen, and all my stocks showed unmistakeable signs of being foulbroody. I now commenced to experiment, and every comb containing brood was removed, the brood cut out and buried deep in the ground, and new combs that contained no brood were given to each hive. In a short time these combs had brood in them, and were likewise infected; and so I went through with the same operation of cutting it out; and towards the latter part of summer no brood hatched out at all—my stocks being so badly infected.

I know of but one way to cure this disease, and I *strongly* advise others who are troubled with this malady to adopt my remedy, namely—destroy all the hives, combs, and everything about the apiary that came in contact with the foulbrood. I melted all the combs, and burned all my hives, and had a thorough cleaning out of everything that would induce the disease to return. I then purchased a new stock of bees, hives, &c., and have not seen any traces of foulbreed since.

That this disease is so contagious as some writers allege, I do not believe. One of my neighbors had at that time fifty hives of bees, and none of them were more than twenty rods distant from mine; yet not one of his stocks was infected. Perhaps some bee-keepers will not agree with me so far as burning the hives, but I am certain that this is the cheapest and surest way in the end.

My experience with foulbrood cost me about two hundred dollars, and I am not sorry that I had something to do with it. Should it again make its appearance among my bees, I know just what to do, in order to subdue it; but I do not expect ever to see anything of the kind again.

H. Alley.

Wenham, Mass.

☞ We entirely concur with Mr. Alley in advising the immediate and complete destruction, by fire, of hives and combs, after suffocating the bees with the fumes of brimstone, whenever a colony is found infected with foulbrood. This should be done in every case, unless perchance the owner is disposed to avail himself of the opportunity to study the disease, and is in a location remote from all other bees. This, of course, will be a rare case, and in every other we advise a prompt resort to the *ordeal by fire.*

The character of this disease is now probably undergoing a more thorough scientific investigation than ever before; and it is to be hoped that an efficient remedy will, ere long, be devised, fully tested, and then given to the public "without money and without price."

[For the American Bee Journal.]

The Toad.

Mr. Editor:—As almost all the principal issues in the science of apiculture have been pretty well discussed through the columns of the Journal, books, &c., there seems but little left about which to write. But, as is often the case, one gets his curiosity as fully gratified in the "side show" as under the main canvas; and, as "variety is the spice of life," we propose for a moment to look in upon the performance in the "smaller rig."

In nearly all the books on apiculture we have a chapter treating on the enemies of bees; and, amongst others, the toad comes in for his share of "blessings." Now, to this we object. In our humble opinion the toad is one of the most harmless, yet useful, assistants we have. But some one says "his very looks ought to condemn him."

Not too fast, friend, lest we prove too much. Truly he has not much whereof to boast. If noble origin is to be taken into account, it must be confessed that his parentage is most humble. But why banish him on that account? How often do we find the richest kernel enclosed in a rough shell, or a manly, loving heart beating under a tattered waistcoat!

It has been said, and forcibly, too, that "an ounce of prevention is worth a pound of cure;" and now if we can use our hero as an assistant against known and acknowledged apial enemies we surely have gained another point, and shall save from banishment an humble occupant of a nook in our domain—one which, by the way, has the same right to "life, liberty, and the pursuit of happiness" as a great many bipeds who not unfrequently ape the characteristics of a certain quadruped. But this is going away from the point. The question is, can the toad be of use in apiculture; and if so, how?

That the moths are among our worst enemies no one doubts; and if any plan can be devised to extirpate them partially or entirely it will be hailed with pleasure. And that our hero is fond of Madam Bee is certain; also, that he is partial to moths, ants, bugs, &c. Now, if it be possible to prevent him from seizing the former, and allow full scope to his propensity to capture the latter, he certainly will redeem himself from reproachful aspersions. That he was created to be of service in the world, and that a part of his duties are to assist the apiculturist, we feel quite certain. We know, too, that he is a special friend to the horticulturist, destroying myriads of insects that prey on his cherished productions. And from the fact that he is frequently found in proximity to Madam Bee's domicile, and knowing his predilection for small game, can we not secure his services by simply placing a wire fender around the entrance of hives, and then allowing him full range of the premises? Place your hives near the ground, and the pedestal will form a good retreat for him during the heat of the day, and when "still evening" comes on you will find him on hand, and alert as a trusty sentinel. Let your bottom boards be wide enough to allow a seat by the side of or beneath your colonies, and he will make short work of the moth that attempts to deposit her eggs under the edges of the hive.

And now, as friend Quinby hands him over to the judge with a "recommendation to mercy," I will assume that officer's functions *pro tem.*, and charge the jury to bring in a verdict of—"*Zeke, you let that wood-chuck go!*"

J. W. Barclay.

Worthington, Pa., Jan. 12, 1870.

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In some occasional cases, where the nectarium of the flower is not perceptible, if the spur of such a flower, which usually becomes the depository of the nectar that has oozed from the capsules secreting it, be too narrow for the entrance of the bee, and even beyond the reach of its long tongue, it contrives to attain its object by biting a hole on the outside, through which it taps the store.

[For the American Bee Journal.]

Maple Sugar for Bees.

As I was thinking of Mr. Langstroth's recommending sugar candy for bees, to feed them in the absence of honey, the thought struck me that maple sugar might be as good a substitute. Accordingly I took some small cakes of it, as they were prepared in the spring when the sugar was made, and placed them where the bees could get to them and cluster thereon. They immediately collected on it and commenced eating, as a flock of hungry hens would attack a pile of corn.

I am feeding quite a number of colonies on pure maple sugar. I do not mean the black stuff that is generally made in caldrons, which I have seen so black that you could not tell it from the muck in the swamps. I should think such stuff (for stuff I should have to call it) would be poor food for bees. But sugar made in sheet-iron pans, as we make it, is far superior, and my bees seem to devour it with insatiable appetite. Sugar can be made much purer in sheet-iron pans than in iron cauldrons or kettles. My bees seem to be doing well on it up to this date, (Jan. 1, 1870,) and I think it will prove to be as good feed as sugar candy. In fact, in one sense of the word, I think maple sugar is candy.

As this is a new experiment with me, I should like to have other bee-keepers who see this, and have bees to feed, to try the maple sugar, and report results through the Bee Journal. I fear there are many colonies that need feeding, as the decrease in colonies next spring may show. I am well pleased with the Bee Journal, and would not be without it for twice its cost.

D. H. Coggshall, Jr.

West Groton, N. Y.

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[For the American Bee Journal.]

Non-swarming and Queen-catching.

Great efforts are being made to secure the control of queens, in order to control the swarming of bees. For evidence of the supposed importance of having such control, I need only refer to the many efforts being made by different individuals to attain it.

Mr. Quinby says: "First and most important, I want to control swarming and to prevent it—not by giving extra room and then guessing they will not swarm. I want to be certain." See American Bee Journal, April, 1869, page 184.

No one knows better than Mr. Quinby that a swarm will return to the parent hive, unless attended by a queen. May I, through the Journal, tell him and all the readers of that excellent medium, of a little contrivance for catching queens, whether at swarming time or any other when it is desired to catch one.

I have no interest whatever in the trap, except such as may be in common with any bee-keeper who may use one; but having used one two seasons, I feel confident in referring to it as a desirable thing for any one who wants to catch queens for any purpose.

This trap is about three inches wide by nine inches long, and is made by Mr. V. Leonard, of

Springfield, in this (Bradford Co., Pa.,) upon the principle spoken of by Mr. Langstroth, page 174, third edition of "*Hive and Honey Bee.*" It is true that this trap will not catch a queen unless she goes into it; but at swarming time she will do this in attempting to go out of the hive with the swarm, the trap being placed at the entrance. And no bee-master will be at a loss for ways to cause her to attempt to go through at almost any time when it is proper to open a hive. If the queen can be seen at once on the combs as we handle them, there is no better way than to catch her with the fingers. But if, as is often the case, especially in populous colonies, she keeps out of sight, the trap makes sure work of it, if we place it at the entrance, and shake the bees from the combs in front of the hive. They will return to the hive through the trap, and if the queen is among those shaken off, she will be caught in her attempt to return, and can be disposed of as you please.

With this trap all after-swarms can be made to return; and then queens, whether one or many, can be caught and used as you please. Drones being larger than workers or queens, are excluded by the adjustment.

It will be seen from this that when a swarm is on the wing, the queen of which has been caught in the trap, if you remove a parent hive and set an empty one in its place, the swarm will return to the place whence they came, and finding the queen there caged, will enter the new hive of their own accord. The swarm may then be set elsewhere, and the parent hive returned to its former place, if you so choose.

P. PECKHAM.

Columbia Cross Roads, Pa., Jan. 14, 1870.

[For the American Bee Journal.]

Two Queens in One Hive.

In opening some hives to-day, (Jan. 6,) I was much surprised to hear piping from one of them, to which I had given an Italian queen about the middle of September. I supposed that the queen I had then introduced was dead, and that the bees had raised another to supply her place. But, on taking out the first frame occupied by bees, I saw a young queen, perfect, able to fly, or to do anything else required from a young queen; and on the next frame I found the old queen, looking as well as possible. Both this frame and the next had considerable brood, just hatching; and nearly in the middle of the one on which the old queen was, I saw the cell from which the young one had just been hatched. Everything appeared to be ready for swarming, and had it been at the proper season, I should have supposed that the presence of two was caused by the old queen's inability to fly, and her consequent detention till the young queen was hatched. But, as it is, it is all mystery to me. If any of your readers has observed anything like it, I should like to hear from them, as I can see no reason for bees wishing to supersede a queen, which, to all appearance, is perfectly healthy and not six months old.

Bees have not done well here the last two seasons—last being very short. We had not over fifteen day's good weather in June and July, and if the bees had not stored honey as fast as bees ever did, in those days, they would have fared badly this winter. But, as they are all old stocks, they are wintering well. Many late swarms, however, will die if not fed. I doubled all mine at swarming time, and they are all right, while those not doubled are short of honey.

I have been troubled with skunks last fall and fore-part of winter, trying to get at the bees or honey, or both, by digging under the ends of the hives and scratching about the entrance, thus keeping them in an uproar—sometimes all night.

I have generally had best success in introducing queens in October, but found it did not work this year, as the bees would hardly accept them after being caged ten days.

How many stocks can be kept in one place, when white clover is abundant, with considerable locust, whitewood, basswood, &c?

Three years ago I obtained from one colony $37.50 *worth of honey, and a good swarm of bees.*

E. M. JOHNSON.

Mentor, Ohio, Jan. 1870.

[For the American Bee Journal.]

The Italians and the Blacks.

MR. EDITOR:—I saw an article in the December number of your valuable BEE JOURNAL, page 120, headed, "COMMON BEES AND ITALIANS." What I have to say in regard to that article is this:—I have had the Italians and the natives both in one apiary for the past five seasons; have paid equal attention to both, giving each the same style of hive, same management, &c., throughout each season, and have decided thus: *First*, in good seasons for honey-gathering, both do well. *Second*, in seasons like the one just past, as it has been with me and many others, the natives have all they can do to gather sufficient stores for wintering, and yield no surplus; while the Italians gather sufficient for wintering, besides giving a surplus of from twenty to seventy-five pounds per hive. *Third*, in certain locations, in seasons like the past, when there was no honey to gather, neither kind can do well. *Fourth*, the only correct way to give the Italians a fair trial is to keep both in the same apiary, in the same style of hive, and with the same kind of management for a number of years in succession, and then compare the result of each season. Where this has been done, I do not know of a single instance where the decision has not been highly in favor of the Italians. There are bee-keepers in my neighborhood who have heretofore stated that the Italian bee was a mere speculation, carried on by a few individuals only, such as Mr. Quinby, Mr. Langstroth, Mr. Stratton, Mr. Cary and myself, or a few others; and that only those capable of rearing the Italian queens were the chaps to derive profit from the Italians, all others paying dear for the whistle, and so on. This was the general talk among inexperienced bee-keepers in my vicinity, from the first introduction of the Italians until the year 1867. Since that time their conversation has changed somewhat in favor of the Italians. The past season has convinced many of their superiority over the natives, which gave no surplus, when the Italians, in the same apiary, yielded twenty pounds and upwards, besides ending the season with larger stores for wintering. This I find to be the case generally throughout my neighborhood, and in many other localities where the season was such as it was here. In fact, the Italians proved their superiority over the natives every season since I had them in my apiary; and in the past one gave me several swarms and a goodly quantity of surplus honey. The natives, on the contrary, gave me neither swarms nor surplus honey—proving almost a total failure as regards profit. As for myself, I keep bees for profit, as many others do. Then why not keep the kind that bring us the greatest income for the same care and labor bestowed, and same capital invested? This is my motto, and I shall continue to cultivate the Italian bees as decidedly preferable.

P. J. Severson.

Knowersville, N. Y.

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[For the American Bee Journal.]

Bee House.

Mr. Editor:—As you have adopted the very liberal policy towards the bee fraternity, of letting every man who has made, or fancies he has made, an improvement in any department of apiculture, publish a description of it in your journal, I desire to avail myself of your liberality to describe an improvement in Bee Houses, for which Letters Patent No. 96,668, were issued to me November, 9th, 1869.

You and your readers are aware that the best manner of wintering stocks of bees, and also reserve queens, are two objects to which bee-keepers have of late devoted much attention. I have been studying to solve the same problems.

The design of my improvement is to furnish a good and cheap means of wintering bees on their summer stands, (and of wintering reserve queens,) without sacrificing the convenience of separate hives, for performing the various operations required by the most advanced system of apiculture. It consists of a square box with an entrance for bees in each side, to contain four hives of any description in use. I prefer the Langstroth hives, using the shallow forms with two sets of frames to obtain honey in frames; and the brood chamber of Henry Alley's "New Style Langstroth Hives," (cut of which appears in the Bee Journal, Vol. 5, page 54,) for obtaining box honey. The bottom is made of two thicknesses of pine flooring with a space between, filled with any non-conductor of heat. The top is made in the same way, (of thinner material, to make it light,) and shaped like the roof of a house. The walls consist of inch boards lined with several thicknessess of roofing paper or anything else that may be preferred. The house is divided horizontally into two sections of about equal depth. The upper section is on hinges, so as to open like a chest. The seam between the two sections is made air tight with listing or rubber. Openings for ventilation are provided through the floor and roof. Around the inside, about two inches above the floor, is nailed a narrow strip on which rest boards fitting close to the hives and forming a second floor, which may be permanent or removable according to convenience. If I used a hive having honey boxes placed on the sides, I would make it removable, otherwise permanent. The object of this is to give free circulation of air around the entrances of the hives but exclude it when desired from the upper chamber till it has passed through the hives and been warmed by the bees. This upper chamber is the most important feature of the house. When the weather is unsuitable for bees to fly, the lighting boards are made to turn up and close the entrance perfectly tight and dark. Then the warmth arising from four stocks of bees is combined in the upper chamber and retained by proper adjustment of the ventilators, so that no signs of frost or dampness appear in the coldest weather.

This chamber also furnishes a very convenient place for wintering reserve queens in nucleus boxes. It is better to winter the nucleus stocks if it can be done conveniently, because it saves the trouble and loss of breaking them up in the fall and making them anew in the spring. These boxes may be made with openings in one side, corresponding to the openings in the hives for the honey boxes. When the honey boxes have been removed in the fall, the nucleus boxes can be set in their places, with wire cloth to keep the bees from passing. Thus they will not only have the benefit of the genial warmth of the chamber, to which they each will contribute a share, but they will have a current of warm air direct from the hives. Each house will easily keep in this way sixteen reserve queens, four to a hive; enough probably for all practical purposes. But if the boxes are made eight inches long, seven inches wide and nine or ten inches high and set two tiers deep, thirty-two can be accommodated.

The dimensions of this bee house are forty to forty-two inches square and twenty-four to twenty-six inches high, inside measure. It can be furnished, with four hives containing ten frames each complete for $25. This includes a good lock to secure its contents against thieves, the most dangerous *foul brood* we have to contend with in this State.

D. Burbank.

Lexington, Ky., January 6th, 1870.

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[For the American Bee Journal.]

Query Respecting Drones.

Are drones capable of fertilizing queens, if raised from an unfertilized queen, or from a qeeen past the power of laying eggs which will hatch into workers?

J. L. H.

January, 1870.

Experiments made by the Baron of Berlepsch show that drones produced by fertile workers are virile, and it may hence fairly be inferred that those above referred to are so likewise. There may still be a question as to the quality of the progeny.

[For the American Bee Journal.]

Worker Comb changed to Drone Comb and Vica Versa.

As Mr. Dadant thinks that the fact of the bees changing drone cells to worker cells, as communicated by Mr. Marvin and Mr. Alley to the Bee Journal might "throw some light on the determination of sex in the eggs of bees;" it may not be out of place to state that during the past season I had two instances in which the bees done just the reverse, and changed worker cells into drone cells.

The first was by a colony of black bees that I transferred from a large box hive, and having plenty of straight worker comb in it, I filled every section (or frame) with only worker comb. I was particular to exclude the drone comb, because I did not wish to raise black drones. About the last of May I noticed a large number of drones in the hive, and as I had been so particular to put no drone comb in it I was surprised. I opened the hive and the first shut I examined had a patch of drone comb on it as large as my hand and there was nearly as much on four others. The cells were full size, four of them measuring an inch

I examined them closely, after cutting it all out, and found that the walls were composed of a mixture of old and new wax. Without further proof I might have concluded that I was mistaken, but on closer examination I found that the foundation had not been disturbed and had the regular size and angels of worker cells. The drone cells were built on it, the bees paying no attention to the original plan of the foundation, the new cells frequently including a part ot the foundations of four old ones.

The second instance was also in a colony of black bees, from which all drone comb had been taken and its place filled with worker comb, and as it was on the sheet of comb next to the glass and paralled with it I had the privilege of seeing it done. The whole sheet was of worker comb, and, with the exceptions of a small spot of brood, was full of honey and capped over. The first thing I noticed unusual was that the bees were removing the honey from one end. By the next day they had removed the honey from about one fourth of the sheet and had cut away most of the cells down to the foundation and had commenced building up the drone cells. In two days more the job was completed and every cell had an egg in it.

A neighbor of mine, Mr. T. M. Newman, had an instance, last season, of drone comb being used to rear workers. He had taken new white drone comb and transferred it to a section honey box, filling all the sections. He placed it on a newly hived natural swarm. The queen established her brood next in it instead of the brood chamber, and when I saw it, it was full of worker brood. I did not examine the comb closely, but think that the cells were cut down and rebuilt and not filled up funnel shaped as in Mr. Marvin's instance. The queen finally went below and when the brood was all out of the comb the bees filled it with honey.

In the second instance above, I had, a few days before added a half inch section to the brood chamber, as the bees had built the comb so near the glass that there was not room enough to build full length worker cells. This extra room was taken advantage of to rear drones, as it was perhaps the only place in the hive that they could have done it without cutting down the opposite cells.

In the first instance no doubt more space was left, in transferring, between the sheets of comb, than could be filled by worker brood comb.

D. L. Adair.

Hawesville Ky., Jan. 1870.

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[For the American Bee Journal.]

Straight Combs.

Quinby says the bees did not work straight in sectional hives, and a writer in the last Journal says he could not make them build straight with the corner of frame up. The reason is obvious. Short frames involve too many fractional cells, and too near the brood nest. If two combs are started at one frame, they turn one or both to avoid these, and make the range as long as they can. A prime swarm will present the edge of the comb to the fly hole, for free passage and ventilation and the longest breadth of cavity to favor compact construction. In a circular cavity, the side combs narrow and convex, they leave the side combs with going away from the heat. With flat brood side combs, they must go farther from the heat, which is not natural; so they gather in center and perish. Angular frame tops are a want of heat and space. One strip of comb stuck to the top bar of frame secures a straight comb in most cases. They cut off most of these, because they cannot enter the fractional cells, but use the impressions left for the new foundation. A small swarm will build across the cavity presenting the side of the comb to the fly hole, to protect themselves from cold. In square hives with short brood combs in a corner, fencing in their work with thick store combs, sometimes turned at right angles, varying their action with circumstances. They have fought the stupidity of man for ages. Lately I found where two small swarms had been taken, the cavities were narrow in both cases, and extended several feet above and below the fly hole, the bees being in each case just above the fly hole. Upward ventilation is right in winter, but wrong in summer, cannot have both naturally; therefore cannot succeed. This is human authority.

F. H. Miner.

Lemont, Ill.

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Many plants could not be perpetuated but for the agency of insects, and especially of bees; and it is remarkable that it is chiefly those which acquire the aid of this intervention that have a nectarium and secrete honey.

[For the American Bee Journal.]

Alsike Clover Again.

In the December number of the Journal for 1869, page 125, there is an article from Mr. Adam Grimm, on Alsike clover. It seems from it, that he is not very favorably impressed with this clover, as a honey-yielding plant, in the vicinity of his home apiary. The conclusion he has arrived at, however, is quite different from what mine would have been, under the circumstances. He says he and his neighbors sowed fifty pounds. Sowing four pounds per acre, this would be twelve and a half acres; but we will call it thirteen acres. He says further, "it commenced blooming about the 5th of June, and remained in bloom till the 25th of July." And, still further on, "after examining about a dozen hives every day, during the whole season, I could never discover more than about a hundred cells with a very thin, watery honey."

We have no means at hand of ascertaining the exact number of colonies Mr. Grimm had in his home apiary at the time these examinations were made; but by referring to the Journal, Vol. 5, No. 2, page 35, we find that he had three hundred and sixty-two colonies the spring previous, before any were sold. How many were sold, Mr. Crowfoot does not state (he bought forty colonies), but we will suppose that sixty-two colonies were disposed of. It would be fair to presume that the increase in stock would equal the number sold; but we will leave them out of the account, and suppose that Mr. Grimm had, in round numbers, at the time his examinations were made, just three hundred colonies. The number of worker bees in a good colony is variously estimated at from 25,000 to 50,000. Some writers estimate the number much above the figures here given; but, as we wish to be moderate, preferring to be below the actual number rather than above it, we will call it 30,000. Supposing that one-half of them remained in the hives, while the other half were out on the Alsike, there would be 4,500,000 bees at work on his thirteen acres of clover—equal to 346,154 bees per acre, or 2,163 per square foot. Some twenty years ago there was a gentleman living in Jackson, Michigan, by the name of Chapman. He had been a judge and also a member of the Legislature. A neighbor, living several miles from Jackson, who in addressing another is apt to give him all the honors he is entitled to, had occasion to ask a favor of the judge and wrote to him, addressing the letter to the "Hon. Judge Chapman, Esq." He sent his son to Jackson with the letter. The judge took it, read the direction, and looking up at the boy said—"the deacon has *spread it on rather thick*, hasn't he?" Well, it is somewhat so with Mr. Grimm's Alsike clover, the bees have been spread on there *rather thick*. If the weather was not as wet in Wisconsin, in June and July, as it was here in Michigan, raining almost every day, and he was able to find any new honey in the cells at any time, though ever so thin and watery, I think it speaks wonders for the Alsike clover.

I have now thirty acres seeded to this clover. I had intended to sow only sixteen next spring; but since reading Mr. Grimm's article, I think I will not only sow the rest of the farm, 100 acres, with it, but will also give all the seed to my neighbors that I can induce them to sow. If three hundred swarms of bees can collect and store honey enough in each hive, to make a show from thirteen acres in such a season as the past has been, what will thirteen swarms of bees do on three hundred acres in a good year? NOVICE's vision of rows of jars of honey miles in length, is tame in comparison.

In conclusion, I think if friend Grimm would reduce the number of colonies in his home apiary from three hundred to sixty or seventy, he would find that, in good years, they would collect *some* honey from *white* clover if not from Alsike, even in his poor locality.

One word more about the Alsike clover: Bees will always be found in the greatest number where honey is the *most abundant;* and during the time my Alsike was in bloom, it was alive with bees, (not quite eight to the square foot though,) on all fair days—which, by the way, were like some visits we read of "few and far between." If I remember rightly there were here only eight days in June without rain, and July was a continuation of the same subject, without any perceptible improvement, and the only wonder is that anything in the shape of honey was stored at all, let alone its being thin and watery. Honey from the Alsike is not more watery, however, than that collected from white clover.

J. H. TOWNLEY.

Parma, Mich.

[For the American Bee Journal.]

Artificial Pasturage for Honey.

MR. EDITOR:—I see in the BEE JOURNAL various statements of surplus honey obtained this year in different sections of the country, and am induced to send you mine. This is the first year since I engaged in bee culture that I tried to obtain honey.

My apiary contains forty-five stands of bees, old and young, and I have taken two thousand three hundred and thirty-nine pounds of surplus honey. All this is the product of bees gathering on *artificial pasture*. I live on a very new place six miles from any timber, and there is no white clover, except what I have sown. I have sown white clover, alsike, and melilot. Of all these, the melilot produces the most honey, and the best. My bees gathered honey from it this fall up to the 5th of October. I sowed three acres for my bees, and also some buckwheat.

The above stated yield was the product entirely of artificial pasturage. My bees are all hybrids, and my honey was all box honey. Of my two best stands, No. 5 gave one hundred and seventeen pounds, and No. 26 gave one hundred and eleven pounds. This, I think, is doing pretty well for a new beginner. My hives are all numbered, the honey all weighed, and each hive credited with the amount taken from it.

R. MILLER.

Rochelle, Ill.

[For the American Bee Journal.]

What Caused our Bees to Die?

The summer of 1868 was unusually dry, more so than any for the fifteen years previous. Clover yielded little honey; but on carrying in the hives they were of fair weight. In February the bees commenced dying in cellars, attics, bee-houses, and on their stands, with occasionally an exception of a colony that nearly escaped. Almost all the bees in this vicinity were lost. The winter was unusually long; and many, say one-tenth, of the surviving colonies died on their stands in May and June, after being carried out. My Langstroth hives weighed from sixty to eighty-five pounds each on the 2d of September, when my first (heavy) swarm died. From that time they emptied their combs with great rapidity, and covered them, as also their corn cobs and hives, with their loathsome evacuations, and died, still leaving more or less honey—some as much as thirty pounds.

My hives were then in a bee-house or cellar in a hill side, rather damp, though well ventilated. Fearing the damp air might aggravate the difficulty, I removed my bees to my house cellar, which I ventilated by means of a stove pipe running through the ceiling and connecting with a main pipe in the rear of a stove, thus giving the bad air a continuous circulation and draft through the chimney in the attic.

We have had more rain than snow so far this winter, and my cellar is damp. The corn cobs mould some. The mouths of the hives are open; honey boards off; caps raised half an inch for ventilation; still the cobs are too moist.

Did our bees die with dysentery? If so, what caused it? Could it have been prevented? Will they be likely to suffer from the effects of the old honey which was put in for the new colonies, eight or ten pounds to a hive, at swarming time?

Is comb ruined by mould under ordinary circumstances? Should it be cut out?

Would it be better in my case to take off the caps entirely from my hives where the mercury is kept up at 40°, leaving only the corn cobs for protection? or will the escape of heat prevent the bees from breeding? Some think it is as well for them not to breed much until the honey season approaches; but my stocks are now deficient in bees.

The last season was unfavorable, being very wet, with cold nights. We had an abundance of white clover, but it produced very little honey. My bees collected most of their stores from a patch of Alsike clover, which was thronged constantly while in blossom. I have no seed to sell, all of mine being burned in my barn. I consider this clover invaluable for hay and honey, and hope to see it raised extensively. O. C. Wait.

West Georgia, Vt., Jan. 1870.

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Instinct indicates to bees and other insects their enemies, and the wrong these may intend, and shows them how they may be repulsed or evaded.

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Honey is a very favorite food and medicine with Bedouins in Northern Arabia.

[From the Western Farmer.]

The Bee-Comb Guide Patent — How a $500,000 Law-Suit was Managed.

In a telegram sent from Madison, Tuesday evening, Jan. 6, it was stated that a Bee-Hive case, said to involve $500,000, had been tried in the U. S. Circuit Court in Madison, the plaintiff being K. P. Kidder. the defendant M. Trask.

Some facts concerning this case; how it was brought and how it was managed, we propose giving the public, as in the question at issue thousands of bee-keepers in all parts of the country are directly interested, and the estimate of the amount involved, given above, is probably not too high.

The question is simply whether a certain patent, granted to one George H. Clark in the year 1859, giving him the right to control the putting of triangular shaped sticks (or a bevel edge) in bee-hives to serve as comb guides for the bees, is a valid one. The parties principally interested in proving the invalidity of the patent are Messrs. Langstroth & Son, the proprietors of a patent hive in which this comb guide is used, and of which many thousands have been sold. Mr. Langstroth, senior, claims that he invented the device in February, 1852, that he made and sold a large number of hives, with this triangular guide, in 1853, and that, in 1854, before it had been in public use two years, he applied for a patent on it. He also claims that subsequently an application for a patent on the same device was made by Mr. Clark, and an interference between the claims was declared. Before this matter was decided, it is claimed that a gentleman in Illinois made an application for a patent for the same invention, and an interference between the three claims was declared, and that the Commissioner finally decided that none of the applications would be allowed—as an English work had described substantially the same device. Mr. Clark, who claimed a prior invention, kept secret, renewed his application, and in 1859, after it had been rejected several times, secured a patent.

This is, in brief, the claim of Langstroth & Son, except that they additionally claim that Mr. Clark having originally applied for a patent on this sharp edge in connection with *bars*, the use of it in connection with movable frames as in the Langstroth hive is not covered by this claim. The Langstroths have persistently used this device, and the agents of Mr. Clark, or his assign Mr. Kidder, continuing to claim that this use was an infringement on the Clark patent, they issued a circular in 1867, cautioning the public against paying any fees for such use, and expressly guaranteeing all purchasers from them against any costs or damages awarded by the courts.

It will be seen from this history that the question is one to be decided by the courts, and that it is in a high degree desirable that it should be fairly tried and definitely settled. That it was not so tried in the suit referred to above; that it was a case of collusion between the plantiff and defendant; that the counsel for the defence was not furnished with all the facts in the case, we think is clear.

The case was brought by K. P. Kidder as the assignee of Clark, against Mr. Trask. The case was not a calendered case; the papers were filed on Jan. 3, and the first opportunity the public had of knowing there was such a case was when it was called for trial, Jan. 5. Mr. J. R. Bennett appeared for the plaintiff, although the name of U. S. Senator M. H. Carpenter appears as one of the attorneys, and we understand, the case was really managed by one May.

Mr. Gregory, of the firm of Gregory & Pinney appeared for the defendant. He stated to the court that it was an agreed case: that he had only just been retained and had not had time to investigate it; that he felt it due to the court and himself that these facts should be known before he would consent to try the case. And here we wish to state that we believe Mr. Gregory acted in good faith; that he believed the full case had been furnished him and that it was brought as an amicable suit to settle a disputed point—in other words we believe he was deceived. While we think it to be regretted that he allowed himself to try a case of the kind without more full personal investigation, we do not for a moment believe he acted in a way that the strictest sense of honor would not approve, with the light he then had. He is an able, widely known and deservedly esteemed attorney.

We do not understand that Senator Carpenter appeared at all in the case, and from what we know of Mr. Bennett we do not believe he was a party to any deception. We know nothing of Mr. May.

Several witnesses appeared for the plaintiff, a hive was shown, and the case was evidently well prepared on that side. No witnesses appeared for the defence, and we understand the only evidence offered on that side was a copy of Langstroth's original patent, in which there is no reference whatever to this device. The defence, as we have heard it reported, consisted mainly of an ingenious and able attempt to prove that the device was not patentable, and that its use here was in consequence of the discovery of an instinct of the bees, which discovery was not patentable.

Seeking for that which, had he known all the facts in the case he would have not needed to have sought, we understand that Mr. Gregory asked each witness if he had known of any use of this device before the date of the Clark patent, 1859, and that each testified that he had not. If this be true we can explain such an answer by no satisfactory supposition.

The case went to the jury, who returned a verdict for the plaintiff, awarding him damages for the use by the defendant of the Langstroth frame with this triangular comb guide

No one, we suppose, claims that the defendant expected or wished to gain the case. We are informed he has used the "Kidder Hive" for years, and has defended his claim. He stated, soon after the close of the case, that he had expected to lose it, and thought he ought to.

The plaintiff was in our office for an hour on Jan. 4, and again on Jan. 5, but the first intimation we had of the case was after it had been decided, on Jan. 6; although, when we were so informed, it occurred to us that we had heard of it, and we so informed the plaintiff. A gentleman interested in the defence was informed by a prominent witness for the defence, the morning the case was called, that it would not be tried. A "remarkable coincidence" is found in the fact that Mr. Kidder, when he first called at our office, asked if we had received the January number of the American Bee Journal, and on being informed that it had just arrived, but that we had not yet read it, asked for it; carefully read a minute statement in it by Mr. Langstroth of his claim; asked permission to take the paper with him for a day; took it; returned next day, and asked permission to keep it another day, and finally returned it within an hour of the rendering of the verdict. This copy was probably the only one in the city. It may have comported with his sense of honor to sit through the trial of an agreed case, where it was understood that all the facts were presented, with this statement of the claims of the defence snugly stowed in his pocket.

Another very singular circumstance was that, very soon after the decision, we were called upon by two gentlemen and requested to publish a "report" of the trial, which was read to us—most of it having obviously been written before the close of the trial. We were gravely informed that, as the case was one of much importance, and as they had noticed we were not at the trial, they would like to have us publish this "report," and that the writer of it had no interest in the case. We stated that we would publish it and would call editorial attention to it. This we do by stating that its author has been for years an agent for Mr. Kidder; was a prominent witness for him in the case; has asked persons to settle with him for the use of this device; that his name is not the one signed to the report, and that the whole thing is a very clumsy attempt to produce a false impression.

We can conceive of no profit which Mr. Kidder hopes to accomplish by his course, that will prove it wise for him to have taken it. He cannot suppose that this decision will be quietly allowed to stand. The case, we repeat, is one for the courts to decide, and we do not attempt to say which claim ought to be allowed, but we would refuse to pay for infringement in the use of this device, until the case had been fairly and fully tried; and it certainly was not so tried in this suit, and our faith in the strength and rightfulness of the plaintiff's case is certainly not strengthened by the course he has pursued in relation to this trial.

[For the American Bee Journal.]

A Request.

Mr. Editor:—I propose building on the surface of the ground, for winter use, a bee house large enough for sixty stands. I wish to know the best plan for ventilating, and also the proper size of ventilators. Suggestions based on experience or experiments will oblige.

John Clarke.

Liberty, Ind.

[For the American Bee Journal.]

Novice's Metextrator.

MR. EDITOR:—We thought we gave directions sufficient before, but have received so many inquiries on the subject that we have concluded to to try again.

We would say here, however, that we have no idea that our machine is the best that ever was made; but we do think it is superior to the *wooden* machines about which several correspondents have had so much trouble in boring *large* holes through small sticks. Having the machine made all of metal we certainly think it is cheaper, and if your readers could all take a look at ours, we fear they would laugh at its simplicity. They would certainly not find trouble in getting it together.

Well, any tin-smith can make you a can or tin tub, twenty inches high and twenty inches across the top, or, if that does not suit your frames, then of any dimensions you like. Cut out two pieces of wire cloth (fine or coarse, as you prefer, will answer,) about half an inch larger than your frames, all round. Take white galvanized iron wire, so that it can be soldered readily; the kind used so extensively for white wire clothes lines, about an eighth of an inch in diameter, is just the thing. Bend this wire so as to run around your pieces of wire cloth close to the edge, and solder it at about every inch or two. These two frames of wire cloth are to be attached to the *shaft in the centre*, so as to revolve as near the outside as they can conveniently without any danger of touching it. They should stand the longest way up and down, with the side the wire is soldered on next to the sides of the can. To fix them in that position, take two pieces of the same wire, thirty-five or forty inches long, bend each of them in the middle around the shaft near the bottom, so as to leave the four ends sticking out like the spokes of a wheel. As your shaft is iron you can solder them firmly in place. Fix four more similar arms near the top. Now turn the ends of the arms around in a curve so as to solder on the back side of the frames, one to each corner, and it is all ready to spin. The bearings to the shaft you can fix as you like. We made the bottom bearing by soldering a piece of saw-plate in the centre of the bottom, and a blank iron nut on top of that, so it turns very easy, and there is no danger of wearing a hole through. The top is a thick piece of wood, notched in for the sides of the can, and a hole in the centre for the shaft. For convenience in taking out and putting in the frame, the piece is made quite narrow only, at the ends. We think a crank on the top of the shaft would give speed enough, although we use the gearing of a common apple-parer.

We forgot to mention that some bearers will be needed to keep the frames from sagging with heavy combs. These are easily made by soldering a wire from each of the four lower corners to the shaft, where the upper arms are fastened. Put a wire cloth across the bottom if you wish it; it is very handy to lay broken combs on. If the wire cloth should be too light, put another wire across the middle. Of course the comb must be turned as soon as one side is emptied.

We consider it much less trouble than taking off the boxes, and have sold readily all we could get, for twenty-five cents per pound. We would rather furnish it at twelve and a half cents per pound, if we could get no more for it, than box honey at twenty-five cents. Boxes are among "the things that were" with NOVICE.

January, 1870.

[For the American Bee Journal.]

Multiplication of Colonies.

Several correspondents are anxious to know what I think of NOVICE's increase of colonies the past season, and some of them appear to doubt the truth of his statements. Now, it certainly would not answer for me to doubt their truth after all my experiments in that line.

When I first came here I obtained a swarm of bees which the person from whom I procured them supposed were entirely worthless. I wintered them through, and early in April I transferred them to one of my hives, that is, I transferred enough comb to fill two frames, the remainder being worthless. I soon found that the queen was old and almost useless for breeding, and she had very little over a quart of workers with her. However, by stimulating and coaxing, I succeeded in getting the hive filled with combs and bees by the 20th of July. I used to carry them in and set them near the stove at night to keep up warmth, and carry them out in the morning. On the 20th of July I received an Italian queen from a friend in Wisconsin. I removed the old queen and one frame of brood from the hive; introduced the Italian queen; raised five queens; superseded the old one, and made four swarms. All were large and strong, with one exception, which had only six combs. All this was down after the 20th of July, by keeping up the temperature of the hives by covering at night, or carrying them in to the stove when it was cool, and by feeding whenever the bees could not gather enough. All of them wintered well.

You will see that taking a worthless swarm and increasing it to five, was fully equal to, if not more than Novice accomplished the past season. With the same care and attention I could have taken a good strong swarm and increased it to fifteen, easier than to do what I did with the miserable poor one. The reason for starting with such a swarm was, that I could get no other, and I moved that one more than forty-five miles in February.

This matter or question of increase there can be no doubt about when rightly understood. A great many people attempt a large increase without understanding the true principle of increase, and therefore ruin the whole—original stock and all. If a person has a few good stocks to begin with, and can obtain the comb already built, I consider such comb equal to a swarm; that is, if I have comb sufficient to fill the hive. Of course the comb would be of no practical value without bees.

I repeat that a queen can be made to breed to any desired extent by proper management, providing she is a good one, and if she is not a good one she ought to be replaced by a good one as soon as possible, whether your object is increase of stock or surplus honey. E. GALLUP.

Osage, Iowa.

THE AMERICAN BEE JOURNAL.

WASHINGTON, FEBRUARY, 1870.

A change in our arrangement for publication may delay the appearance of this number a few days, and constrains us to retain till March several articles intended for its pages—among them some interesting communications from old correspondents.

We feel assured that it will be gratifying to its friends to hear of the steadily increasing patronage of the AMERICAN BEE JOURNAL. At no time since it was commenced has its subscription list grown so rapidly and largely as within the past month; and flattering evidence of the warm interest felt in its success by intelligent disinterested beekeepers, is constantly reaching us from all parts of the Union, the British provinces, and Europe. As we have ever scorned to resort to clap-trap and humbug to extend its circulation, may not claim, to some extent at least, that

> "The force of its own merit makes its way?"

while we fully appreciate and gratefully acknowledge the aid and countenance received from many long-tried and steadfast friends.

We have received the tenth or concluding part of Dr. Packard's "GUIDE TO THE STUDY OF INSECTS." The work is now completed, and constitutes a popular introduction to this important branch of natural history, such as has long been needed.

The second volume of Adair's "ANNALS OF BEE-CULTURE," or that for 1870, we understand, may be looked for early in the spring.

Many practical beekeepers are of opinion that pollen is indispensably necessary for bees during winter, but experiments have shown that all the essential operations of the colony may proceed from October to May, fully six months, though the hive do not contain a particle of pollen. It seems certain, nevertheless, that ordinarily bees do consume it in all the winter months, excepting November. Dr. Donhoff, when analyzing the contents of the viscera of bees, found traces of pollen therein at all times, except in November. Communicating this fact to Prof. Leuckart, the latter said it was corroborated by his own independent observations. Shortly thereafter, however, the Professor discovered that the mucous tissue lining the stomach and intestines of bees, undergoes decomposition or is sloughed off annually, and renewed, in the interval between the latter part of October and the beginning of December, corresponding precisely with the period in which the consumption of pollen is pretermitted. Hence the non-use of pollen during the interval results, probably from the abnormal condition of the insect at the time.

After much delay in its transit, we received by mail, from Mr. H. M. Thomas, of Brooklyn, Canada, a package of Alsike clover hay, showing its condition and quality as fodder, after the seed has been removed by threshing. We referred the subject to an appropriate *cow* committee, by which it was thoroughly discussed, evidently *cum gusto*—ending in a very intelligble *motion* for more; but, deeming eager manducation and deglutition a satisfactory *report*, we discharged the committee without awaiting further *rumination*.

We publish on another page a complete list of the patents on beehives, &c., issued during the year 1869, for which we are indebted to Mr. Grinnell, Chief Clerk of the Patent Office. The number is large, nay, considering how ancient, wide-spread and common is the pursuit to which they relate, it may be regarded as very large. We apprehend however, that the sanguine expectations of most of the inventors are doomed to disappointment: for according to our observation, patents on beehives and cognate contrivances, like those on velocipedes and bouquet-holders, are not profitable investments. About nine-tenths of them, being based on exploded notions or misconceved theories, prove to be practically failures; and of the comparatively few that are really new and useful, the miserable crew of infringers and modifiers speedily contrive to divert the emoluments from the original and meritorious patentee. The inventor of a truly new and useful device certainly deserves the protection and remuneration which a patent is intended, but usually fails, to secure; but at this advanced period in the history of bee culture, and in view of the improvements made in the last thirty years, he must be a genius indeed who contrives and constructs a hive of preëminent and permanent value. It is sheer folly to rush to the Patent Office in hot haste to secure a patent for every whim-wham that strikes the fancy of one laboring under a paroxysm of "bee on the brain." Better far, save your money and charitably suppose that others also may have had the same or similar ideas, and have tested, or be testing their value, though the Chiefs of the Patent Office are unaware of the fact. Obtaining a patent is the smallest part of the affair. Time, labor and money are required to introduce it, more time and money, must be spent, and much annoyance and vexation endured, in litigation with infringers; and if in the end you succeed in establishing your *rights*, it generally proves to be an empty and bootless victory.

We received a few day ago, per mail, from Mr. Henry Alley, Wenham, (Mass.) an Italian queen bee and about a dozen workers. They were caged and provisoned as Mr. A. usually prepares them for transmission by mail in the summer, with some special protection from cold. When first opened they were somewhat sluggish as bees are when clustered in the hive in winter, but they quickly revived.—It thus appears that queens may be safely sent in this manner in cold weather; though it is rather difficult to preserve and properly dispose of them when received at this season.

We copy from the "*Western Farmer*" an account of how matters were managed in the "triangular comb guide" case recently tried in the U. S. Circuit Court at Madison, Wis.; from which it will be seen how mere a sham the whole suit was. The decision will probably be used to frighten timid or ignorant parties into paying for the use of the "guide," though we do not believe that suit will be brought against any who refuse to pay and show a determination to resist and bring out the facts.

We shall next month publish an extract from a paper read by Dr. John Hunter before the Royal Society in 1782, showing that the use of such a guide was known to him, and published to the world, three-quarters of a century ago.

Correspondence of the Bee Journal.

Independence, Mo., Dec. 17, 1869.—The season in this part of the country has been only moderately favorable. Up to the 5th of August there was too much rain; but from that on the bees did very well. We had an unusually good crop of white sumac, and a very heavy one of fall bloom. Colonies gave from twenty to sixty pounds surplus. Bees unattended to suffered much from the *moth*. Many persons lost all they had, whilst those who gave their bees proper attention, obtained a handsome profit.

As I did not give you my age, &c., with my photographs, I will now give it. I am a native of the State of Tennessee; born in Sumner County, in September, 1819; removed to Jackson County in 1839; am a practical mechanic (builder and joiner,) have been experimenting with bees eighteen years, and have now about 130 stocks in good condition.

In view of the advantages that may be derived from comparing notes, facts, and practical results. I would suggest that the *bee-keepers* of the United States hold an annual meeting, at some convenient point, in the interest of bee-culture alone; and that such steps be taken as will secure the attendance of inventors with all the different models of hives, that the practical utility of these may be investigated and facts noted which will be advantageous to the public, shielding them from impositions that bring reproach on men who are honestly endeavoring to advance science and remove the superstitions that have so long enslaved the minds of those who have been imposed upon. St. Louis, in this State, is about as near central as any other point, and the State Fair will come off in October next; and as all the railroads leading into the city are accustomed to giving half-price fair tickets, for ten days, during the time of going to and returning from the fair, I would suggest that as the time and place of said meeting.

James D. Meddor.

Newbury, Ohio, Dec. 18.—Bees have done but little here the past season, and very few bees are kept. I am just starting in the bee business, with only three swarms in Langstroth hives, which I purpose to Italianize as soon as possible in the spring. I should like to know through the Journal, if any have tried lining hives with paper as a non-conductor and absorbent; and if so, what success they have had with it.

J. L. Way.

Newton, Ohio, Dec. 18.—Bees have done poorly with us through this season, not having swarmed much, and many of the young stocks are short of stores. I removed only about 1000 lbs. of surplus honey from my colonies, which should have given me five times as much. They are in good condition for winter, as I doubled all my young swarms, so that they are all right and wintering finely.

E. M. Johnson.

Bloomfield, Iowa, Dec. 18.—Bees did but little in the way of storing honey this season, up to the first of August; but from that time till the frost killed the blossoms we had a continuous honey harvest. Some stocks cast swarms as late as the 1st of September, which filled their hives with nice rich honey. My stocks (swarms included gave me 41¼ lbs. each,) of box honey. Each stock went into winter quarters rich in stores and strong in numbers.

I would like to know if any of the readers of the Journal have tried introducing a queen into a full hive, about swarming time, to induce natural swarming. If so, I should like them to give us the benefit of their experience through the Journal.—J. P. Fortune.

St. Catherines, Ontario, Dec. 24.—I find that I cannot get along without the Bee Journal; and as it costs me fifty cents a month for tobacco, I think I will shut down on the "pernicious weed," and expend the money in Bee Journals.—O. Fitz Wilkins.

Waverly, Iowa, Dec. 24.—I find in the December number, page 118, of your excellent Journal, that your correspondent, W. C. Condit, wishes to have reports from those who have tested the method of introducing queens by the use of grated nutmeg. I find it works like a charm. I tried it with six queens last season, very successfully indeed; and henceforward I shall do away with the caging process.

The past summer was very poor for honey, though one of my hybrid stocks gave me a good swarm and sixty pounds of box honey. I do not think that the black bees average five pounds of surplus honey to the hive, in this country, the past season. Some of my neighbors are feeling finely, whose apiaries are five miles distant from my Italian bees, on finding that some of their young queens are giving them workers with two yellow bands. This speaks well for the Italians in this part of the west. I use the Langstroth hive.

Enclosed please find two dollars, for which send the American Bee Journal to J. H. C. of ——, Jasper County, Mo. I send it to him as a New Year's present, as he is a beeman; and I advise your readers to go and do likewise—sending the Journal to some friend who will enjoy it as well as the rest of us.—H. K. Lovett.

New Cumberland, W. Va., Dec. 25.—I enclose in this letter two dollars, and wish you to continue sending me the Bee Journal for the coming year. I like the principle on which it is conducted. The various writers give us many practical experiments in the cultivation of the honey bee. We can see all over the States what bee-keepers are doing, and where there is a good location or a bad one. I see the honey product varies from place to place, almost every year; but it has come a little hard on us here. We have had two bad seasons in succession. The summer, a year ago, was so dry and hot that nearly all the white clover and the red was killed. This year, the season being wet and cold, the secretion of honey was very limited in all flowers. We had very few swarms of black bees in this county. Most of the Italians swarmed, and made some surplus box honey. —A. Chapman.

West Point, Iowa, Jan. 1, 1870.—I am well pleased with your Journal. I do not think I could do without it, for I find something of interest in every number; so that I think it has well paid me for taking it. I have now twenty stands of bees; fourteen of them are Italians. Bees have done very well here last summer.—C. Whitlock.

Newburyport, Mass., Jan. 3.—I bought a swarm of Italian bees, about one year ago. and this was my first experience in bee-keeping. Of course I felt myself incompetent to manage them successfully and made inquiry for some work on the subject and learned of your Bee Journal. I at once sent for it, and am satisfied that no man ought to keep bees without it. I did not get it in season to learn how to set them to breeding as early as they ought, in order to have a strong swarm when the honey season came in; and then, too, it has been a poor season for honey. Near the coast we had cold nights and easterly winds much of the time; and were it not for the fact that my bees did much better than any other in Old Essex, I might be discouraged. They did not swarm, but I took, in boxes, forty pounds of honey. I took them to the county fair, and there obtained the first premium of four dollars. There were three or four old bee-keepers present, with their experience and new style of hives, and friend Alley with the rest. All said their bees did nothing this year, and we must try again and see who will win. By the way, I am about to make a hive, different, in some respects, from any I have yet heard of. After I have proved it, I will report what success.—D. T. Batcheldor.

Gonzales, Texas, Jan. 2.—My bees are doing very well, and are very rich. They made me seven hundred pounds of honey last summer. I could have taken more, but concluded to let them have an ample supply, as I want to increase my stock. I expect to send to Kentucky in the spring, for a patent hive. —L. W. Cochran.

Illiopolis, Ills., Jan. 12.—Bees have done better in this section of the country the past season than for several seasons previous. From ten hives I had an increase of twenty, and seven hundred (700) pounds of surplus honey. I am much pleased with the Journal. and think every bee-keeper ought to take it. —G. Boughton.

Red Oak Junction, Iowa, Jan. 3, 1870.—Bees have done extremely well in this part of the country. Some strong Italian stocks have given as high as 240 lbs. of choice surplus honey. Most of it was extracted with the "Honey Extractor" except that gathered from the Golden Rod, which was so thick and adhesive that it would not separate from the comb, forcing comb and honey together through the screening, under a fast motion.—The average yield of all my Italian stocks, for the past season, was 143 lbs. 4 oz. Most of the surplus not consumed by the family, was sold at home, the balance in Red Oak Junction—all at 40 cts. per. pound. Who can say: bee-keeping does not pay better than any other occupation.—To keep bees without your Journal, would be like keeping bees without the movable comb.—E. Kretchmer.

Rich Valley, Minn., Jan. 3.—I get little sympathy here on the subject of bee-culture, from people in this section, though they watch my operations with interest. They seem to regard such new-fangled inventions as movable frames and honey-emptiers as entirely beyond their comprehension. I am but a novice at the business myself (am twenty-three years of age) and my experience dates back only three years. I have never bought any patent hives or Italian bees, and was first interested on the subject by reading Mr. Langstroth's great work, which I believe to be the best book on bees extant. Two years ago I bought a few stocks of bees in box hives; and have since constructed several hives for my own use, with Langstroth frames, twelve inches in length by eight in depth, (what would Gallup say of them, for this climate?) I think that it would be almost impossible to winter bees in them, on their summer stands, here on the prairies. But in the cellar it is easy, with upward ventilation. Unless that is given, the comb speedily become mouldy, the bees become uneasy and their abdomens distended with a watery excrement; and they leave their hives whenever a light is taken into the cellar. But with plenty of ventilation at the top of the hive, I have not lost a single colony of those wintered in the cellar. When bees are active and at work in the summer season, they keep up a constant circulation of the air through their hive; but when clustered together for warmth in winter, they have no means of doing this. Hence the need of upward ventilation to let the moisture of their breathing escape from the combs and hive.

Last spring I constructed a honey-emptier—getting a tin can made as described by Novice, and making the other parts myself. It cost me about five dollars. But instead of the iron shaft and gearing, I made the centre shaft of wood, with the top end rounded, so that it could be turned with a cord, as described by J. L. Hubbard. But I soon found the cord a nuisance, for by rolling the rounded end of the shaft between the palm of my hands, I could give it the proper motion easily enough, and empty the combs from two of my small frames in a few seconds after they are placed in the machine. Such an operation greatly astonished the old fogies about here. However, though greatly increasing the yield of honey, I found that the honey thus taken would not bring as much in the market, by ten cents in the pound, as box honey—the latter selling at 30 cents, and the former at 20 cents. Nevertheless I think a great deal of my honey-emptier for family use.

And now, Mr. Editor, accept my good wishes for the Journal. If there are two objects that American bee-keepers should be proud of, they are Rev. L. L. Langstroth, and the American Bee Journal.—L. M. Lindley.

* * *

[For the American Bee Journal.]

Cheap Paint for Hives.

As it is time for making hives, and they need some paint. if it is intended that they should be durable. White lead paint is considered a poor article for such purpose. What is needed is some cheap and good substitute, and one within the reach of every bee-keeper. Can any one furnish a recipe in the Bee Journal, for the benefit of all its readers?

D. H. Coggshall, Jr.

West Groton, N. Y. January 7, 1870.

AMERICAN BEE JOURNAL.

EDITED AND PUBLISHED BY SAMUEL WAGNER, WASHINGTON, D. C.

AT TWO DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

VOL. V. MARCH, 1870. No. 9.

[For the American Bee Journal.]

NOVICE.

DEAR BEE JOURNAL:—Here we are, February 8th, with our bees so near through the winter and in just the nicest condition that can be imagined; (we mean the bees;) but if any one should understand the remark to apply to us individually, he would not be very far wrong after all, for if the bees are all right, we generally are, as nothing else can upset us.

Mr. Editor, that bee-house of ours is all we could ask for thus far, and we have little fear of any bee-disease now. We have had some quite warm weather, and a few times some of the bees came out on the floor, perhaps half a teacupful in a week. This was a small matter, but we did not just like it; and upon a careful examination of all the hives, we thought we perceived a faint smell of something that reminded us of last winter. Accordingly, we that evening opened the doors until just before daylight next morning, when we found everything pure and sweet as we could wish. That was about three weeks ago. Since then we manage to open the doors over night once or twice every week—that is, when the night is not very cold, and we have many such this winter. Another fact; our pine doors were made to fit as close as they could without sticking. After the house had been shut about a week, the inside door is so tight that it can hardly be opened, and after being open all night, the bees are all quiet and the door shuts without touching, although made of the best seasoned pine. Does not this rather look as though our ventilators were not large enough? They are seven inches across, unobstructed, and the temperature very rarely goes above forty degrees.

There is yet one other thing. Our sawdust was not quite dry when put in, and we really do not know how anything could have been dry last summer. In the fall our little stove helped it some, but with such thick walls we do not suppose it got dried through. The bees seem amply able to keep warm enough, as they keep at steady forty degrees in the coldest weather we have had, which has not been lower than 10° above zero.

So far we can hardly believe any honey at all has been consumed, as the sealed cells yet cover the tops of the frames.

Now, Mr. Editor, while the bees are all quiet and all right, we should like to have "our say" on bee-hives. If we have not said anything on the subject before, we have kept up an "awful thinking," and have some ideas of our own on the subject—though we should dislike to imagine that, as a correspondent suggested on page 210 of vol. 4, we are too well Rooted to be instructed. Far from it, for the very same article in which that expression is used, has been worth very much to us, and we hereby tender our sincere thanks to the writer for the light he then gave us.

Perhaps, Mr. Editor, you had better say

"Novice on Hives,"

and then we will try and stick to our subject.

In the first place, kind readers, we have no idea that a hive can be made that will just suit *every one*, for so many perhaps have a particular way of doing a thing, and each one can do it better in his own way than by any other plan. We said some time ago that our Langstroth hives universally gave us more honey than the American, though we could not tell why—which has been kindly answered by the Baroness of Berlepsch. But we should have said then, and meant to say, both "bees and honey." Mr. Truesdell and Mr. Gallup started us in the right channel of thought, and we think we can now give the true reason in our locality.

When we wintered our bees out-doors, many of them were sure to be quite weak in the spring, and it took a considerable part of the season to build up before they were ready for business. Those in the American hive would be near the top, and we have invariably found much trouble and delay in getting the queens to laying below that wood cross bar, (which Gallup refers to when he speaks of the waste heat necessary in brooding a stick!) Well, the Langstroth hive invariably becomes full of bees, long before the bees in the American hive have used the combs down to the bottom board; because they have only to work out horizontally, *in precisely the same manner that Quinby gets such large yields in side boxes.* This is really no myth. Quinby don't speak so strongly unless he is sure of what he is saying.

Again—one way of getting "lots of bees," or "lots of honey," is by having "great big" swarms. If we are firmly Rooted anywhere it is just there; and we do not know of any half as easy to get such stocks as the two-story Langstroth, ten frames above as well as below, no honey board, and allowing the queen to come up stairs of course. Who has a better right? If we could get her to fill the whole twenty frames with brood, all the better. We think we could then get honey in such a season as Mr. Gallup mentions in his last; though we do not think Ohio is ever quite as bad as that. Of course the old-fashioned bee keepers call every season "the worst that was ever known for bees," (how bad they will get at that rate!) but we have found them all "*jolly*" so far. (Mr. Editor, why don't you nudge us and say—you are discussing seasons and localities, and not hives?)

Then let us get back to our mutton. We have fifty American hives, and how to make large swarms of them, if we had bees in them all, we really do not know. We cannot put on an upper story, and we cannot get the sides together, and we should not like them if we could.

Mr. Editor, do you know what a lot of brood and combs a two-story Langstroth will furnish? We are almost inclined to think, from one experiment last fall, that our best way will be, in the spring, to make every stock a full two-story one before swarming at all, and then make them *full grown at once*, on the plan we gave, even at the expense of having them a little later. We should always remove the upper set of frames in the fall. Mr. Truesdell's and Mr. Gallup's hive would do very well for one strong stock, but when it comes to be two-story or three, we—ah, well, we think we had rather have an old Langstroth, and if asked why? perhaps we might be induced to argue as the ladies do, and say "*cause we do!*"

But there is certainly one very strong reason in favor of Langstroth's pattern, viz.: to make and handle *thirteen* frames, to obtain the results (we mean with heavy, full stocks of bees) that we now obtain with *ten*, would be going back to something slower—which we never like to do; however, we are going to try an Economic Hive this season for experiment.

Mr. Quinby says, in his Circular for 1870, that several parts of Mr. Langstroth's hives happen to be unimportant to him, so he has not retained them. Further on he says, that with the improved hive, he has devised, it is *safe to calculate on an average of one or two hundred pounds of box honey, or two or three hundred when the melextractor is used.* We read this over and over, thinking it was not possible that Quinby meant to make such a statement, and then reflecting that we could not afford to be behind, we sent $10.20 for a full sample hive, boxes and all, to see what it looked like.

Now, Mr. Editor, it was our misfortune to be so firmly Rooted in our own ideas, that we were really very much disappointed *at first*. Yet we hope we have sufficient good sense to know that Quinby should have reasons for his preference, and from his large experience should know far better than we do what is necessary.

There are eight large frames, (two less than Langstroth's, and so much less handling, as mentioned before,) standing up in the middle of the base board or floor. They are held upright by a piece of band iron fastened to one of the lower corners and bent at right angles, so as to slide under a strip of iron running just under the corners of all the frames. To remove a frame, we have to slide it lengthwise backward half an inch. (Directions are to move all back at once. How about gumming and propolis?) The frames are fixed at a certain distance, by nails driven in just so far, (a plan we have not liked in other hives,) and strips of tin slid in grooves sawed in the sides of the end pieces, making a tight hive inside, like a box hive. After this strips of tin are also laid on the top between each pair of top bars, to keep them in place. They are bent into a V-shaped trough, two of them lapping in the middle between each pair of frames, close the brood apartment, except the sides, which are closed by the side boxes. To open the hive, the fourteen pieces of tin must be taken off the tops of the frames; then the other fourteen pieces that close the ends must be pulled out of the grooves, as the frames are removed, for they can only be got back by sliding them in from the top after the frames are put back close up to the nails. The frames cannot be replaced in any other way, even in a hive without bees, as we vainly tried to do.

The advantage gained by these twenty-eight tin strips is that of having the circulation of air prevented between the ends of the frames. In the spring, especially, we have no doubt this would be of considerable importance with a weak swarm. But with a strong swarm, in a well-made Langstroth hive, with tight honey-board and all, we really think there could be no great difference. Of course we cannot judge so well until we have given it a trial, and may be much mistaken in many things; but those twenty-eight tins covered with propolis appal us. With the melextractor, he directs sixteen frames, all side by side; and we must think that such a shape would not be the best economy.

For out-door wintering, his hive gives every advantage, as far as we can see, of a straw hive; and for spring and summer, the outside case makes a double hive; but does not the disadvantage of depriving the bees in spring of much of the benefit of the sun, counterbalance the advantage? We could not help thinking that our smooth, clean Langstroth hive, with its suspended frames, was—oh, so much simpler, easier, handier every way.

The arrangement of the side boxes, we have no doubt, is a great thing; but why not have the frames on a bent iron rod, or something of that sort? (We have made a second story to the Langstroth hive, quite satisfactory by raising the cap, and hanging the frames on a bent rod rising from the four corners.) We thought, perhaps, Quinby's hive was not intended to be opened, but in his directions to make it a non-swarmer, he says the queen-cells must be cut out every week, and with the melextractor what then? By omitting the tins we might get along; but then, we fear, the fabric would all keel over.

We cannot help thinking that Mr. Quinby has more time at his disposal than we have. A friend, who assisted us with our melextractor, could not be persuaded that the Quinby hive would be practicable at all, as we used the Langstroth frames.

We intended to be present at the convention in Cleveland, but a mistake in the date prevented. We were there two days before, and saw a beehive that, for a labyrinth of puzzles, was ahead of Quinby's. The inventor, in trying to please everybody, has introduced everything he probably ever heard of in beehives. From the report of the convention, we should judge that it would have done very well for about fifteen years ago. We think the Bee Journal, the melextractor, etc., were not mentioned at all. There is something about the Italian bee, but not much.

We may have said a great deal, Mr. Editor, in favor of the Langstroth hive, yet we cannot help thinking that a straight line is the only shortest line between two points; and even if that is covered by a patent, it is better to use it than to go to great expense to avoid it. After tendering our best wishes to all bee-keepers, we will remind them of what they probably already know, that the ideas advanced are, after all, only those of Novice.

P. S.—Mr. Editor, will you please tell those that do not know us, that we have no interest in Langstroth's patent, or any other, and never expect to have—for which, as for *all other blessings*, may we always be thankful.

[For the American Bee Journal.]

Faults in Wintering Bees.

In the July number of the Bee Journal, pages 5 and 6, Mr. Dadant tells us of his mishap in wintering bees. I was well aware when I penned the article to which he refers, that I did not give the whole cause, according to my own views, but the great trouble with me is, to condense my articles, and still say all that I wish to say on any subject, and not have it too long for one article in the Bee Journal. Therefore I do not know any better way than just to take Gallup as you find him, and not expect him to be as he ought to have been.

I think that in one article I said that a large number of swarms had died in this vicinity, and large numbers more would die before spring. *Why was I so positive?* For this very reason, that the bees had gathered considerable quantities of honey in September, while the weather was cool, and also while their numbers were greatly reduced in accordance with *the old age theory*. Hence the consequence would be (and was) that said honey would not be sufficiently evaporated for the bees to winter on. Perhaps I cannot better illustrate this, than by giving my own management and that of one of my neighbors only a fourth of a mile distant—both operating at the same time, with the same kind of hive, and under the same climatic influence. One of my hives had only seven frames filled with comb and honey and occupied by bees. That stock wintered in excellent condition, and had abundance of honey to last till the 1st of June. By that time they had the hive completely filled with bees, vacant side and all; but at no time had they gathered sufficient honey to build comb. My neighbor was managing his colony under my instructions, and I was very careful to explain to him the reasons, the whys and wherefores of my instructions, and also the consequences. But, instead of following my directions after his hive was half filled with comb, (for I examined it myself up to that time,) he removed the division board entirely, and gave the bees access to the empty half at once. The consequence was, they built more comb than my colony, and stored honey outside of the cluster; and that honey was thin and watery, not over half evaporated. I helped him to set them in the cellar in the fall, pronounced them as having abundance of honey to winter on, as they were actually heavier than several of mine; but I did not open the hive, to examine them. Some time in February two of his colonies starved to death. I then examined them and found, for the first time, that he had removed the division boards, contrary to instructions. I asked him why he did so, and his reply was that he could not see the propriety of following my instructions; or, in other words, he thought he knew better than I did! When will bee-keepers learn that honey gathered in cool weather must be stored in or directly above the cluster of bees? Or, in other words, that the hive must be compact and adapted to the quantity of bees in the colony, or the honey stored at such such times will be worthless for wintering. Warmth is indispensably necessary for the due evaporation of nectar. If the weather is warm enough, all right; if not, the bees must be assisted in keeping up artificial warmth.

It is a very easy matter to prophecy, that bees are going to winter remarkably well in this locality this season. Although the summer was wet and cold, there was abundance of honey gathered in the fall. But there was plenty of brood, and the bees were strong in numbers; and unless they were in very badly formed hives, their honey is all of excellent quality and well evaporated, they will not consume over one-third the amount they would if it were only half evaporated. To still further illustrate this, I have seen in July, when the bass-wood was in bloom, and the weather showery and hot, night and day, and the atmosphere moist, (at such times the secretion of nectar is immense,) strong stocks fill every vacant cell through the day, and even fill a comb placed outside at the entrance; and in their eagerness even gather honey while it was raining quite hard. Now, examine them at night—all is full, bees, combs and all; and all this nectar is so thin and watery, that on turning the comb slightly sideways the least jar will make the liquid drip out like so much water. But examine again next morning, and this then watery stuff is nearly all gone. It is condensed by evaporation and stored in the surplus boxes; or a portion, perhaps, manufactured into comb. There is now again any quantity of empty cells, and the comb that was filled on the outside of the hive, is once more entirely empty. All through the night the busy little fellows kept up such a loud noise that they could be heard for rods from the hive; and the following day they fill the cells again, and the same process is gone through anew. At night this then watery stuff is all converted into the very best quality of honey. All this is done, mind you, while the weather is hot night and day.

One more example. Several years ago, I knew a man by the name of Gallup. He had quite a number of good colonies, all in box hives; and some time about the 10th of August, he had seven stocks that had neither cast swarms nor stored surplus honey. He drummed out a large swarm from each, and put them into large hives, sixteen inches square and fourteen inches high; and twenty-one days after, he drummed out the remainder of the bees, as all the young brood had then hatched; and united them with the first swarms. He then had seven hives filled with pollen, &c., for sale or family use. Did not he boast of what he had done? No swarm of bees could fool him out of his honey! Well, those new hives were all weighed before the bees were put in, and they were weighed again after the bees had done working for the season, and they averaged fifty-eight pounds, net, after deducting the weight of the hive. Well, you see that his neighbors had hives in the same condition; but they did not drum them out, as Gallup did—and did not he come over them? The fact is, that anything that this Gallup did not know about bees was not worth knowing! Along in the winter these bees had the dysentery pretty badly; and by the first of March, every swarm of the seven was dead—all starved! Now remember, that while the bees were gathering this honey, the nights were very cool; and the hives being so large, it was impossible for the bees to get up the necessary heat to evaporate it properly. The last part of that performance Gallup did not boast much about. However, he made the discovery that he did not know as much as he thought for; and when a person has made that discovery, there is a great chance for him to learn more. E. Gallup.

Osage, Iowa.

P. S.—I still think that the *old age theory* was at the bottom of that bee-disease in this vicinity.

[For the American Bee Journal.]

Size of Hives and Product of Honey.

I was interested and instructed by the account given by A. Grimm of his experience in bee-keeping. By the experiments of twenty-seven or eight years, with so great a variety of hives, large and small, his opinion is certainly entitled to much weight. I cannot claim a long experience or the use of any great variety of hives. My experiments were commenced in 1860, in the seventieth year of my age, and have thus far been aimed to the securing a hive from which a swarm may be secured at the pleasure of the keeper; or the whole colony be continued constantly at work, not delayed by the disposition to swarm, and no time lost in preparation for it. My change in the hive, either in form or size, has been partly to secure this or these objects.

A word of explanation about the size of hives: Mr. Grimm informs us that he has used hives from seven hundred to four thousand eight hundred cubic inches in the main apartment. This main apartment is, in fact, the hive; while the boxes that form the receptacles of the surplus honey, which are added or removed at pleasure, do not form a part of the hive proper, that being the apartment strictly given to breeding and wintering. When the boxes are on they form the principal part of the room for honey. The breeding apartment is of the capacity of from about one thousand to two thousand cubic inches, I think probably from sixteen hundred to eighteen hundred may be the best. When we come to the boxes, the different sizes (of hives) have boxes of from three thousand two hundred and forty to nine thousand four hundred and four cubic inches, holding from ninety to two hundred and forty pounds. There may be a little more or less than this, according to the manner in which the comb is constructed. It will be seen that the whole room in the central apartment and the boxes, ranges from four thousand two hundred and forty cubic inches in the smallest, to eleven thousand two hundred and forty in the largest. The inquiry is, what advantage is secured by abundant box room.

1. All the workers will be actively employed in storing honey. With no boxes and the hive small, all but those accommodated with room within, will cluster outside of the hive, and only leave to get their daily provision, and return to cluster outside. If two small boxes are placed on the hive, enough may gather in them to occupy the room; and if no preparation is making for swarming, they will store honey in the boxes; but the balance of the supernumeraries will cluster out in idleness. If the boxes are all placed on to make room for the whole colony, as they increase they will enter the boxes and work in them, unless preparations for swarming are making. The result will be, honey will be accumulating in all the boxes, instead of in one or two. I have known a colony storing honey in twenty-five boxes at one time, and they gave one hundred and forty-seven pounds of surplus. Another colony worked in all its boxes at one time, as many as twelve empty boxes were required to supply the place of as many full boxes which were removed. They gave one hundred and seventy-four pounds in the season. Does any one believe they would have gathered as much with only two or four small boxes upon the top of the hive, changed six or eight times?

2. Bee-keepers understand well that during the time of preparation for swarming, very little surplus honey is stored. The most is used to supply the brood and be ready to accompany the queen in her emigration. I have several times noticed colonies that I supposed were engaged in filling the surplus boxes, that when the swarm issued would leave their boxes and to my surprise leave them entirely empty. The loss of a week, and sometimes two weeks, right in the height of the honey harvest from white clover may make a difference of fifty to one hundred pounds.

3. It is known that the old queen emigrates with the new colony. The brood in the parent hive that forms the second and sometimes the third swarm, are the product of the old queen. Suppose the first swarm gathers forty pounds for winter, twenty pounds surplus; the second swarm gathers twenty-five pounds for winter; the old one gathers twenty pounds besides winter stores. It will be recollected that this is the work of the product of the old queen. The young queens will only be ready to supply workers to take the place of the old laborers, who have finished their labor with the close of the season and passed away. We have now, if we add twenty pounds for the third swarm, one hundred and twenty-five pounds, besides the winter stores for the old colony. If we add to this fifty pounds lost by idleness during the preparation for swarming, we have from the colony one hundred and seventy-five pounds in surplus in the one hive. Can any one assign a reason why this result should not be reached?

Mr. G. informs us—"When I commenced bee-keeping in this country, I had only one colony, which doubled itself the first summer, but gave me no honey. In ten seasons, during which my stocks had, by natural and forced swarming, increased to fifty-three, I obtained surplus honey from hives and caps only in two seasons."

Again, he says:—"In twenty-one years the bees in my home apiary have not gathered a pound of white clover honey; nor, with the exception of one season, have they stored any in boxes from buckwheat, while some of my neighbors, three or four miles off, have had white clover and buckwheat honey stored in most seasons."

Has not Mr. G. been engaged in raising bees for sale, increasing his stock by artificial swarming, and raising queens, in nucleus hives? If so, may not this account in part for lack of surplus honey? Are not his hives calculated to secure these objects? Are they not simply box hives with cap and boxes on the top, or Langstroth's with but little box room for surplus honey? This may account in part for the failure in surplus.

I have brood from four colonies in the two thousand cubic inch box hives, with boxes on the top covered with a cap. Three of these gave one swarm each, and not one ounce of surplus honey. One gave no swarm and twelve pounds of honey. Thirteen colonies in the farmers' hive, with boxes of seventy or eighty pounds capacity to each hive, gave an average of a fraction over sixty-one pounds each.

Four Eureka hives, in 1867, with box room for one hundred and twenty-five pounds per hive, gave an average of one hundred and twenty-five pounds each. This was in a field where neighbors near by, in the old style box hive, would only compare with the common results of such hives.

Now I know not why my friend G. may not do as well with the same appliances. One hive gave one hundred and seventy-four pounds; and more than one hundred pounds of this was from white clover, and so fine as to sell for forty cents per pound.

If I had Mr. G.'s apiary, I should put the colonies doubled into the Eureka hive; place them in two fields, well ventilated and shaded, expecting thus arranged to obtain from them an average of from one hundred and fifty to two hundred pounds each.

I think Mr. G. gives his highest average of surplus honey in his hives at fifteen pounds.

A colony of bees will probably consume sixty pounds or more, within the year. On this supposition Mr. G.'s bees consumed four-fifths of the honey gathered, and he secured one-fifth. He had four hundred colonies at one time. They must have required for consumption twenty-four thousand pounds. This is twelve tons. Suppose it was at this time he had his average of fifteen pounds per colony; then he secured from all six thousand pounds, or three tons.

My colonies in the Eureka hives gave an average of one hundred and twenty-five pounds. At the consumption of sixty pounds per colony they gave five pounds per colony more than two-thirds. Four hundred colonies in Eureka hives would have given fifty thousand pounds or twenty-five tons. This presents the following question: "Shall we place our bees in hives in which they will give us but one-fifth of the honey in our field, or in hives that will give us more than two-thirds of it?"

A word on the Italian Bees.—I observe, in a communication in your issue for January, 1870, a mistake which, I think, should be corrected. In 1867 I had four colonies of bees in the Eureka hive—one Italian and three native. I gave an account to the "*Rural New Yorker*" of the result that season. The product of the Italian colony was two swarms and one hundred and six pounds of surplus honey; of one native colony, two swarms and ninety-seven pounds of surplus; of one other native colony, no swarm but one hundred and twenty-three pounds of surplus honey; the other colony gave no swarm but one hundred and seventy-four pounds of surplus honey. I gave this result as the fruits of that season. But I think I was not such a novice as to say or suppose that that settled the question as to which kind of bees was best. In 1868 I had seven or eight additional colonies of Italian bees, purchased in 1867. They stood in the same apiary with my native bees. The bees in our field of three miles each way, were nearly or quite doubled from the previous year, and gathered less than half the honey per swarm on the average. My four highest colonies gave respectively one hundred and forty-seven, one hundred and six, seventy-nine, and seventy-five pounds. Neither of the colonies of the black equalled the lowest Italian by several pounds. The success of the Italians was reported in several papers, in which I gave a report of my apiary for the year.

I should not trouble you with this correction, but I am unwilling to be considered as prejudiced against the Italian bees. I think the friends who are seeking to introduce them into the country are doing a public benefit.

In reply to your correspondent's hint of the propriety of my entering largely into the bee business, I may say when he enters his eightieth year, he may learn why entering largely into any business will seem a heavy burden.

I will add that I feel much interest in your valuable journal and wish you much success.

Should any of your readers wish particularly concerning the Eureka hive, I will send them a circular on receipt of their address and a postage stamp. I wish agents in every town.

JASPER HAZEN.

Albany, N. Y.

[For the American Bee Journal.]

Bee-Keeping in Eastern Massachusetts.

MR. EDITOR:—When we read in the JOURNAL statements of the large profits of bee-keeping in different parts of the country, such as Messrs. J. L. Peabody and Andrew Byers gave us in the January number, we feel as though we, in Essex county, (Mass.,) are doing a small business, and conclude that we are in an unfavorable location. Such a conclusion is a correct one; but why is it so? We have plenty of bee pasturage. Willows are plenty; fruit blossoms in abundance; and white clover almost without limit, from early in June until about the middle of July. Still we get a small income compared with other locations.

When I commenced bee-keeping, about twelve years since, I supposed I was in a good location for the business. But I soon found that bees would not increase in numbers, and store honey to such extent as Messrs. Langstroth and Quinby speak of in their books. I was soon convinced that the difficulty was in being situated so near the sea, and getting the cold northeast wind peculiar to this part of New England, from the last of March to about the first and sometimes to near the middle of June.

People who lived here, and afterwards in other parts of the country, (perhaps not out of New England,) say they nowhere feel such cold northeast winds as we have here. Anyone, by looking at the map, can at once see why it is so. It comes sweeping down from the frozen regions, over fields of floating ice, and not passing over much land, it strikes us with a chill almost of an iceberg. After passing over a few miles of land, it gradually becomes softened and loses much of its harshness.

In 1863, from March 28th to June 4th, (sixty-nine days,) the wind was between north and east fifty-one days. In such weather the flowers yield no honey. It is so much lost time with bees. Of course, if honey gathering is checked, stock breeding is checked also. Consequently when white clover, which is the main dependence here for surplus honey, comes into blossom, the bees are not in a condition to gather it, being weak in numbers and light in stores. And by the time they get strong and the hive is filled below the harvest is passed. If the white clover could remain in blossom through July, it would often make the difference between a good yield and a total failure of surplus honey.

I intended last spring to adopt Mr. Gallup's method of encouraging breeding by placing empty combs between combs filled with brood; but found no time up to the middle of May that my judgment did not tell me they needed assistance to keep warm what little brood they had, rather than an increase of it.

Occasionally we have a season comparatively free from these cold winds, and then the bees always do well. Such was the case in 1860, 1864, and 1867. Although the business is very uncertain, I think it pays on the whole about as good profit on capital and labor as other pursuits connected with agriculture.

I agree with Mr. Alley in regard to the honey-emptying machine. I used it last season on one swarm that I judged to be strong enough to work in boxes, but refused to do so. We took out about ten pounds of honey, and I am satisfied that they were as heavy on the first of September as though none had been taken away. It was so much clear gain. Bees sometimes seem to lose all energy. They will cluster outside the hive when there is plenty of room in the boxes. Under such circumstances, if the combs are taken out and returned again, it will oftentimes set them to work with vigor. If the machine is used and a part of the honey taken away, they will work all the better for it. But we should be careful not to take it away too near the end of the honey season.

C. ROGERS.

West Newbury, Mass., Feb. 2, 1870.

[For the American Bee Journal.]

Peabody's Honey Extractor.

What are the advantages claimed for this machine over that with a wire box, as made by the National Bee Hive? Well, Mr. H. O., or Mr. J. L. Peabody, please state what advantages it has, and in what they consist. I think the readers of the AMERICAN BEE JOURNAL would, *en masse*, be gratified to receive the information, so that they might before purchasing, judge intelligently between it and the old machine. Will it extract honey quicker? Is it easier to operate with it? Is it cheaper, more durable, and less liable to be broken or disarranged? Answers to such or similar questions would no doubt be satisfactory information to those who propose to purchase machines next spring, and be looked for with interest.

D. H. COGGSHALL, JR.

West Groton, N. Y.

CHLOROFORMING BEES.—"Some time after this, I attempted to quiet an angry swarm of bees by slipping under the gum a sponge containing something over half an ounce of chloroform, and succeeded admirably. When they had become quiet, I removed what honey could be spared from their stores, and left them all quiet. They are quiet still, for the chloroform killed the last bee."

DR. A. LOVE.

In *Southern Cultivator*.

[For the American Bee Journal.]

A few Facts at Variance with generally accepted Theories.

In reviewing the past season's operations in my apiary, I find noted a few facts that came under my observation, which not only seem to be at variance with my past experience, but also with the teachings of some of our scribes and best authorities.

My first swarm, a very large one, issued on the 2d of June, at 9 *o'clock A. M.* It was my intention to make an artificial swarm the next day, but they were a little too fast for me. I soon had them in a hive with two frames, containing short sheets of comb. The next day, at 2 o'clock P. M., they left and settled again. I found that they had made some new comb, and concluded that they left the hive for want of more ventilation, as it was a very warm day. So after preparing the hive for thorough ventilation, I put them back into it. The next day thereafter, about noon, they left the hive again, and made straight for the woods, in a "bee line." I soon run myself out of breath, and gave up the chase. Again examining the hive, I found the combs full of eggs.

The first thing that was unusual about this, was swarming so early in the morning as 9 o'clock. Most authorities say swarms need not be looked for only between 11 o'clock A. M., and 3 o'clock P. M.; and I never knew one before to come out before 11 o'clock. But this was not the only one that came out so early last season.

Again, it was rather remarkable that a swarm should leave a hive, containing combs and honey, after the queen had commenced depositing eggs. I do not think the hive could have had anything to do with it, for the next swarm that issued was put into it and set in the same place, and went to work all right.

Later in the season, when the honey harvest was abundant, I made an artificial swarm, by removing the old hive, putting a new one in its place, with two frames half full of combs, with brood and honey from a third hive, and brushing off a good many young bees from the combs of the old hive in front of the new. I gave them a young fertile queen from a nucleus. The queen was soon laying, and both swarms doing well. Now what was strange about this was, that *when the hive was only about half full of combs, a large swarm came out*, leaving but few bees in the hive, with several queen-cells complete. I removed the queen-cells and returned the swarm, and all went well.

I would here state that my bees (all Italians) this season, had the swarming propensity to an alarming extent, greatly to the detriment of their honey-storing propensity. After more than doubling the number of my colonies, I felt satisfied with the increase, and wished to keep them storing honey, but they were differently inclined, and most of my artificial and first swarms, and even second swarms, sent out new swarms.

This brings me to another fact at variance with some of our orthodox teachers. We are taught that young queens will scarcely lay in drone combs. Now, last season, every young queen in my apiary laid drone eggs, and the bees reared drones in all the available drone combs in their hives, of which, when not removed, there was considerable. I would state that forage was very abundant in September and October, which stimulated the queens to breeding very extensively; and the bees did not kill off their drones—some of which were seen flying as late as the middle of November. All the hives, both early and late swarms, were well prepared with bees and stores, to go into winter quarters.

THADDEUS SMITH.

Pelee Island.

Bees in Yucatan.

I find the following paragraph in Norman's Rambles in Yucatan, in describing a hacienda near Uxmal. Who can tell us more of the bees of Central America and Mexico? The ancient Aztecs had honey when first visited by the Spaniards.

T. S.

"There are a large number of Indians attached to this hacienda, who appear well; and so does everything connected with it. Different from many others, this establishment has an air of comfort and prosperity, much to the credit of those who supervise its concerns. It has its six hundred bee-hives, which are made of hollow logs, cut into lengths of two feet each. They are well arranged under sheds erected for the purpose—opened monthly, and the honey extracted. They do not yield so much honey, or of so good a quality, neither are the bees as lively as those of the north. Their bees have no sting. Great attention is paid to the preservation of the wax, which is almost a staple in the country, so much is consumed in religious exercises."

☞ These bees are *Meliponas*, and might perhaps be cultivated in Florida, but all attempts to introduce them north have hitherto failed.

[For the American Bee Journal.]

Alsike Clover.

MR. EDITOR:—I think you do not say enough in praise of Alsike clover. I have three acres from which I saved the seed this year, yielding twenty-five bushels, which I sold for five hundred dollars as soon as it was threshed. It yields from two to three tons, per acre, of as nice hay as ever was put in my barn. I ditched a meadow a year ago last fall, where nothing grew but swale grass, and of poor quality. I turned the sod over between the ditches, and in the fore part of June sowed it to Alsike clover, without manure; and the result was as stout a piece of clover as ever was seen in this section—the admiration of all who saw it. My cows fed on it till snow fell, which was on the 1st of December. I should state that the land flows at every flash of rain fall.

The Alsike clover keeps in bloom four weeks. My bees gathered honey from it that length of time, and did finely.

A. W. TITUS.

Wilmington, Del.

[For the American Bee Journal.]

Those Diamond Frames once more.

MR. EDITOR:—Pardon me for this second talk to Mr. Conklin and his Bennington colony of bee-keepers.

First, a little biography. I, M. Miller, am fifty-six years old, a cabinet-maker by trade, and worked at it and joinering forty years. I have kept bees twenty years; have Langstroth on the "Hive and Honey Bee," Quinby's "Mysteries of Bee-keeping," and have read all the volumes of the AMERICAN BEE JOURNAL except the first. I have invented five different hives and tested them.

Now, Mr. Conklin, do you think I can level a bee-hive as well as a doctor? Keep cool, and I will add a little to what I have already said on page 99 of vol. 5, in the way of levelling and the mode of hanging a frame angling. I claim a right to talk about them, as I am the first inventor. If I understand you, on page 187, vol. 4, and page 139, vol. 5, AMERICAN BEE JOURNAL, you convey the idea that all that is required to obtain straight combs in the Diamond hive is to level the hive, put in a swarm of bees, and let them have their own way in building; and the frames being hung angling so affects the bees as to secure combs built straight every time. And your Bennington colony sustain your statement. Certainly, at first view, your statement seems to be a strong one. We will examine the case further. A defendant's witness sometimes is brought into court and sworn to tell the truth in the case. He tells the truth, indeed, but only part of it, and makes a case for the defendant. The plaintiff's counsel cross-examine him, and now he tells the whole truth and makes a clearer case for the plaintiff. The last truth spoiled the first. I believe this case of straight combs in angling frames is a parallel one. There is a second truth somewhere, although I may not be able to secure a revelation of it from you or your witnesses. I am confident you and they can reveal if you or they choose. Now, sir, my five years' experience of angling frames, as previously stated, and Mr. Price's of I know not how long, (see AMERICAN BEE JOURNAL, vol. 5, page 140,) is the reverse of yours and the Bennington colony of one year. Why, sir, if it were true that the bees would always make straight combs in those frames, and no exceptions, I would have had a patent for them years ago, and your patent would be nowhere. Did you take your hive to the Michigan Bee-keepers' Convention last September? I see you were there. Admitting you and your Bennington witnesses state the truth, your hive should take the premium at every bee-keepers' convention or fair, *and no* exceptions, if you had it there. How is it that Thomas's hive got it on that occasion? Please turn to vol. 3, page 28, of the BEE JOURNAL, and J. H. Thomas's answer to Querist's question, and learn the reason why bees will not make straight combs in your angling frames, without constraint. The top bars of Thomas's, Gallup's, Quinby's and Alley's hives are about twelve inches long, and they do not always get straight combs without interchanging guide-combs or partitions. Your two combined upper bars are six inches longer on a straight, horizontal line than theirs; and by following the inclination of the two upper bars, they are as long again, and therefore present twice as many points as theirs for the bees to commence building combs, consequently they will start combs in twice as many places in the same frame, and build twice as many crooked combs in yours as in theirs. Colony of Bennington, is it not a fact that you all have secured all straight combs in those two hundred or more hives last year, (for you say hundreds,) by interchanging guide-combs and partition boards? I have sometimes secured straight combs thus in those frames, but it is no credit to the hive; it costs more than it is worth. If not secured thus, I do not see your secret humbug. It may be because you reside in the vicinity of the Professor. You may be tainted with Flanderism! Gentlemen, I will tell you how I found out the Professor's humbug, a number of years ago, at the Ohio State Fair at Cleveland. I first saw the Professor on the fair grounds, mounted on an auction stand, selling *bee-charm*. He had an old, porous plush cap on his head; the cap covered with a swarm of bees, and the bees persisting in sticking to the old plush, although there were on the stand boxes full of *bee-charm*, the bees paid no attention to the charm in the boxes or the bottles, as these passed to the pockets of his customers. Now, why should a little *charm* on the old plush cap have such an effect on the bees, while piles of it lying around had no effect on them whatever? I was bound to find out the mystery, if I could. I looked on until the Professor sold out his whole stock, and gathered up his traps to start for the hive. I then started for Flanders and kept close to his heels, so that we both arrived at the hive at the same time. Off came the old plush cap and bees, and into the hive he shook the latter. He then stuck his hand into the cap, pulled out a paper partition, turned the cap over, and shook out the *queen;* and I found where his humbug was hidden! Now, gentlemen, I may not find out as easily where your humbug is hidden, but it is concealed somewhere. It is not the peculiar mode of hanging those frames that secures straight combs always and without exception. But that they secure the reverse, as a rule, is not guess-work with me. It is experience of which I affirm.

To whomsoever it may concern: The mode of hanging rectangular combs angling, I believe to have become public property six or seven years ago, and free to all to use. But I consider them worthless things, for the reason that there are many better hives. It may be of interest to some to have further proof that I have made, used, and sold to others to use, the rectangular frame hung angling in bee-hives; and the time when they were made and used. I refer such to the Rev. H. B. Hosford, C. W. Farrar, merchant, A. Ellsworth, farmer, William Wright, farmer, O. Porter, joiner, all of Hudson, Summit county, Ohio; T. Colbourn, of Akron, Ohio, and S. C. Brown, of Tama City, Iowa. These have or had them in use. Verily, verily, how uncertain a patent bee-hive speculation is!

Peninsula, Ohio. M. MILLER.

[For the American Bee Journal.]

"Paper Hives," and "Claims" of N. C. Mitchell.

Time has moved apace, and to-night it occurs to me that C. Hastings' last article on the paper hive, in the September number of the Bee Journal, has not received from me the little attention which is its due.

In his first article, after describing Dr. Edwin Cox's paper hive, Hastings says: "They * * * * *meet the wants* of the bees *in every respect.*" In his last article he says: "We do not approve of the Doctor's *form of hive* or *style of top-bar* * * * ; but paper in some form we cannot dispense with." So this paper "in some form" proves to be the diminutive "mouse" that, in Hastings' mind, has been brought forth by the "Elephant" "paper hive," "which originally met the wants of the bees in every respect."

I can see no alternative now for Hastings, than to "come down" in frank acknowledgment that he is himself found numbered among the "gentiles" upon whom the Doctor "played sharp."

Dr. Edwin Cox's theory of the growth of honey comb enables him to work upon the credulity of such as are unacquainted with the "mysteries of bee-keeping;" and when he has persuaded the credulous to believe in his doctrine, he has them in a fit condition for "gulling" them to the tune of heavy sums. The same probably holds true of the author of the little pamphlet sent out in the interest of "Mitchell's Buckeye Hive," who claims that he "can take one good colony of bees in early spring, and increase it to *sixty-four* good strong colonies of bees, with ample stores to carry them through the winter, if a fair season for honey;" and hints in a most *desperate* way at being able to increase said colony to *one hundred* equally strong and well-stored colonies. If men who will advocate such nonsense, by either word or pen, do not find those whom they can dupe by making them believe in the miraculous, and rob them, I know nothing of human nature.

Z. C. Fairbanks.

Appleton, *Wis.*, Jan. 15, 1870.

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[For the American Bee Journal.]

Workers Reared in Drone Comb.

At the suggestion of Mr. Charles Dadant, in the January number of the Bee Journal, I propose to write an item or two concerning drone-raising.

In an effort to raise drones last season, I placed two frames of drone comb in the centre of a strong Italian colony, in the month of September. Three days after I found plenty of eggs, and nine days after some of the eggs were missing and honey was being stored in their place. The brood that remained was capped level; the cells not contracted in any way perceivable. In due time all hatched; but not a drone was to be found, to make sure I examined some of these bees and found they had stings.

I have also had drones raised in worker combs, the cells being lengthened; and also promiscously among worker brood.* In consequence, I am of opinion that the queen determines the sex of the eggs, and is governed according to circumstances and the condition of the colony.

Let me add a word concerning the improved Langstroth non-swarming hive: Those I have were made at Hamilton, Ohio, and are his standard hives. I elevate the back end of the hive to an angle of thirty degrees, (30°.) In that way it is not a shallow or a deep hive, but forms a medium, with the advantage claimed for the triangular-top hive. I have as yet always succeeded in getting straight combs; and use frames in the upper box mostly. During the four seasons I have used these hives they have given me, in the poorest honey season, forty pounds of surplus comb honey, and sixty pounds in the best season, without swarming; and with that I am satisfied.

The honey resources are not sufficient to make reports as some I see in the Journal.

John L. Fisher.

Tiffin, *Ohio.*

* In such cases the queen is evidently approaching superannuation, and should be removed and replaced by a younger and better.—Ed.

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[For the American Bee Journal.]

Ohio Bee-keepers' Association.

Annual Meeting.—Election of Officers.

The Bee-keepers' held their meeting on Friday, January 14th, 1870, at the City Hotel, in Cleveland. During the war these meetings were suspended, but were revived in 1869, and will be held regularly hereafter. On Friday morning a meeting took place, and soon adjourned until afternoon, when the committee on topics for discussion reported the following:

1. The best mode of cultivating the bee.
2. The best mode of feeding bees.
3. The best mode of wintering bees.
4. Does a pure Italian queen, impregnated by a black drone, produce pure drones?
5. The best way to change the breed of a swarm from black to Italian.
6. The best mode of securing surplus honey.

The first two topics were discussed by Dr. J. P. Kirtland; H. D. Danks, of Fondulac, Wisconsin; A. H. Hart, of Appleton, Wisconsin, and several others. The general opinion was that honey is the most profitable food for bees, as it is their only natural and safe diet. Crushed sugar had been used with fair success, but the result was not good enough to recommend it.

Dr. Conklin, of Bennington, Morrow county, said that the President of the Michigan Bee-keepers' Association had told him that he had found that the best way was to destroy the late weak swarms in the fall, and not try and nurse them through. He was in favor of wintering through as many as possible, and then stimulating early breeding. One stock in May is worth four in July. If fed on rye or oatmeal, until natural pollen can be obtained, the prolific queens will lay from two to three thousand eggs per day, during the propagating season. His Italian bees throw off their best and strongest swarms by the 15th of May. His plan is to remove from a full hive one or two cards of comb containing young bees, and place them in a new hive, with a small supply of honey. He introduces queen-bees by artificial process, not waiting for them to be reared in the natural course, thus saving much time in propagating. He said that the greatest profit in raising bees is obtained by keeping the swarms large and vigorous.

The following officers were elected for the ensuing year:

President—Dr. J. P. Kirtland, of Cleveland.

Vice-President—J. T. Merriman, of Burton, Geauga county.

Secretary and *Treasurer*—E. T. Sturtevant, of East Cleveland.

The subject of wintering bees was discussed by Drs. Conklin and Kirtland, Mr. Hart, of Wisconsin, and Mr. Sturtevant, of East Cleveland. These gentlemen all gave their experience on the subject. Mr. Hart had met with the greatest success in burying his hives during the winter, and had tried several plans to preserve them. He had at the convention a new hive of his own invention, which he had found better than anything he had ever seen.

Mr. Sturtevant believed the best way was to leave the hives on their summer stands, and give them plenty of ventilation.

Dr. Conklin thought it well to leave them on the summer stands, and cover the hives with cloths, cut straw and leaves. He thought these absorbed the moisture and retained the heat.

Dr. Kirtland said that the heat arising from fifty-two of his hives standing under a shed, was sufficient to melt snow upon the roof. Here he winters his strong swarms. For the weak ones he has a cemented cellar, where they are kept secure. He experiences little difficulty in wintering. In the way of depredations, he has suffered most from theft. Of late he has been considerably annoyed by the wood mouse. Six swarms were destroyed last winter by them. This year he flanked them by nailing strips of tin, to prevent them from boring under the hives.

The question of Italianizing was next taken up. Dr. Kirtland said he was some time ago presented with an Italian queen bee. He placed her in a hive with a few combs of young bees and honey; she immediately went to laying drone eggs, and in a short time the entire swarm was Italianized. He soon learned by observation that they were much more industrious workers than the ordinary blacks, and he changed his whole twenty-five swarms to that breed.

Brief remarks upon this subject were made by Mr. Hart and one or two others, after which the meeting adjourned till evening. In the evening very few members were present, and after a few conversational remarks, the Association adjourned to meet on the second day of the Ohio State Fair, wherever it is held.

Not the least wonder of this conventicle of wonders—the hive—is, that it confounds the astute reason of man to comprehend it in all its significancies.—SHUCKARD.

[For the American Bee Journal.]

Variation of the Honey Season in Countries having the same Latitude.

In ordinary years, the honey season in this section of country (Jefferson county, Ohio) begins the first of June and terminates about the 20th of July. This term is slightly modified by the earliness or lateness of the spring, character of the weather, &c. If the spring should open early, and the weather favor the abundance of white clover and other spring flowers, with a genial atmosphere throughout, this period may be extended a week or ten days. On the contrary, if vegetation is retarded by the prolongation of winter, and drouth early supersede the alternation of showers and fair weather, the period of honey gathering will be curtailed two or three weeks.

Until recently, I had thought that the time of storing honey by the bees was uniform over all the States, except only that a difference in latitude would advance or retard it, as we proceed either North or South. But, on reading the late correspondence of the BEE JOURNAL from the West, on the honey product and season of last year, I discover that the season most productive of honey there is, by no means, identical with corresponding period here. Accounts from Indiana, Illinois, Iowa, and parts of Missouri and Minnesota, represent that the honey season did not set in there till some time in August, and that it continued through that month and a part or the whole of September. This contrasts so widely with the results in this section as to give rise to the inquiry, what should cause such disparity in the honey harvest in countries in other respects identical? To expect much surplus honey here after July, except in localities where much buckwheat is sown, would exhibit a mind but illy in accord with the history of past experience. Buckwheat is the only plant grown here that bees can forage on in the fall of the year, with any probability of securing a surplus; and *it* is cultivated in limited quantities, and only in seasons when other crops threaten a failure. No other mellifluous plant, of either artificial production or spontaneous growth, abounds in sufficient quantity to furnish honey for surplus, or even a supply adequate to replace that consumed in breeding, wear, &c. What, then, should combine to produce such a disparity of the honey season of countries so contiguous? Reason would seem to teach that white clover, which is our main dependence, blooms simultaneously in all countries not differing essentially in latitude. As this plant continues in bloom in this section no later than July, except in uncommonly wet seasons, it cannot be reasonably classed as one of those flowers, abounding in mellifluous nectar, which caused such encouraging reports from the West. On the contrary, the close affinity that exists between this State and the States of Indiana, Illinois and Iowa, in point of soil, climate and production, would seem to militate against the theory that a different class of flowers would cause the difference. However, incongruous as this sentiment does seem to *me*, the question is inexplicable on any other hypothesis. Who, of the many intelligent contributors to the Bee Journal from those parts of the West in which the fall is the ruling honey harvest, will make this subject the basis of an article for the Journal? Will my friend, Mr. E. Gallup, of Osage, Iowa, who, it appears, has experimented in different climates and States, as well as with almost all kinds of hives, give us an article on the subject of bee pasturage in the countries in which he has resided? The subject is one of interest to a large class of bee-keepers, and doubtless could be made profitable; as its agitation would probably lead to the introduction of some new plants, on which bees could forage with advantage in the fall.

If there are in other countries valuable bee-plants that are not thought to be too foreign to the country in which I live, I, for one, should not be unwilling to undergo some trouble and expense in experimenting upon their adaptation and availability as forage plants here. I see, in one of the numbers of the Bee Journal, a communication from Mr. Farel, in which he speaks very highly of two honey-producing plants, purporting to be different varieties of the golden rod. I also see the Aster very highly spoken of by another writer, as affording valuable fall forage for bees. If Mr. Farel, or any other bee-friend benevolently inclined, will assume the task to procure seeds of these plants, and transmit by mail a small package of the same to my address, I will see that it is to his interest so to do, as in return for the favor, I might perchance accommodate him to something he would like to have. I have hitherto been engaged in the cultivation and sale of almost all the choice fruits, flowers, flowering shrubs, &c., and now have Italian queens. And though numerous varieties of the improved Chinese Asters are grown here for ornament, none of the wild species exist here that I know of, nor of the golden rod either.

John L. McLean.

Richmond, Jefferson Co., Ohio.

[For the American Bee Journal.]

Quality of Soil for Bee-keeping.

Mr. Editor:—On reading the January number of the Bee Journal, and Mr. Grimm's article—"Product of Honey," &c., on pages 134 and 135, I thought it would be well to give my own experience in that respect. Mr. Grimm also complains that Alsike clover yields very little honey in his locality. I was at Jefferson a few years ago, attending a term of court; was in his bee-yard, and examined his hives, fixtures, &c., without as much as asking his leave. I passed the premises at different times during the week, but saw no person to whom I could introduce myself; but it is impossible to keep me out of a bee-yard, and always was, so in I went.

But what I was going to say is, that I formed an opinion at the time, about the soil for producing honey, and Mr. Grimm's article confirms that opinion; and I will now inform the reader how any poor soil may be improved or made fit for producing honey. Where I lived in Wisconsin, the fashion was to cultivate our land until it was nearly exhausted, and then seed it down to grass, expecting a good crop of hay without any manure, and for five or six years I was compelled to feed my bees every summer, to keep them from starving to death. There was an abundance of white clover, but it produced no honey. A neighbor, one season, hired a green son of Erin to haul out manure to a certain six-acre pasture lot that was well seeded to white clover. This neighbor was compelled to get out the manure, as the barn was too large to be moved, Western fashion. He set the man to work, went away on business, and was gone a week. The man covered the ground, so far as he went, from four to six inches deep with manure, and thus smothered the grass completely. But the clover seed came up the following year, and the next season after it blossomed profusely. Then, instead of having to feed my bees they gave me considerable surplus white clover honey. I had the benefit of that clover patch for four years, and it was then plowed up and planted to corn. There was a strip on two sides of the patch that was not manured, and when the manured part was literally covered with bees, and you could fairly smell the honey, there would not be a solitary bee seen on the unmanured part. I took the hint from that, and manured my clover patch; and the consequence was I not only obtained honey, but had the satisfaction of having hay and pasture for my stock.

That the atmosphere has something to do with the secretion of honey in flowers is certain; but the quality of the soil must be attended to likewise. The poorest kind of soil can be made to produce honey, by plastering and manuring highly. It is entirely useless to sow Alsike clover on a miserable, poor soil, and expect it to produce honey. I have seen a couple of rows of currant bushes, the currants produced by which were little, sour things, and while the bushes were in blossom scarcely a bee visited these. I then completely covered the ground six inches deep, in June, for several feet each side of the rows with horse manure, to kill the grass and weeds, and the following spring, while those bushes were in bloom, they were completely swarming with bees every forenoon. Nor was that the worst of it! Our "better-half" said that she could scarcely believe that the fruit was the same variety it was the previous season, as it was so much larger and sweeter. I could give several other instances of this kind, but shall not at present.

Elisha Gallup.

Osage, Iowa.

When bees begin to fly in the spring, it is well to feed them a *little*, even when they have abundant stores, as a small addition to their hoards encourages the production of brood.—*Langstroth.*

If young queens are allowed to issue at will they are pale and weak, like other young bees, and for some time unable to fly; but if confined the usual time they come forth fully colored, and ready for all emergencies.—*Langstroth.*

[For the American Bee Journal.]

A Winter-bred Queen.

Mr. Editor:—I winter my bees in a bee-cellar, formed by digging a hole, seven feet by ten, in the ground in a dry place. The bottom is paved with stone; sides studded, and boarded outside the studding; the rafters are put on at half pitch, with straw and dirt cover over the whole, two feet thick. It has a door in the wall, and another clap-door at the top of the steps. It is an outdoor cellar. A ventilator, three by four inches, goes down from under the eaves, at one end, to the floor; and a chimney five by six inches, from the apex of the roof at the other. It is dark, still, and at a uniform temperature of 35° to 40°. I have used it four winters with perfect satisfaction. I am confident it has saved me many bees, and that we have no business to attempt wintering bees out-doors in this temperature. They must be put in dry, before any frost has formed in the hive, or they will mould. I think this was the trouble with Novice's bees last winter; they were put away with frost or damp on the combs. If bees are dry and free from frost when put away, they will, with proper ventilation, be free from damp through the winter.

In January of last winter I had occasion to look into my bee-cellar. In one of my hives, containing an Italian queen which I received from Rev. L. L. Langstroth in July previous, I found a small cluster of brood in the centre of the hive. It was about two inches square, and in this a queen cell with a grub half-grown, and by its side a drone grub in a worker cell lengthened out. I did not see the old queen.

After thinking the matter over, and suspecting that I had lost my queen, I opened the hive again three weeks later, and found a medium-sized young queen. There can be no mistake in this, as I had clipped the wing of the old one, which was a very fine large queen of much value. The wings of this young one were perfect.

My bees remained in the cellar until the 26th of March, when two very fine days occurred, and they flew freely. It then turned cold, and I returned them to the cellar, (which I frequently do.) After a week in the cellar I took them out again. In a few days I found this queen had laid worker eggs freely. I expected that this winter-bred queen would be worthless; but she did well, and gave a swarm last summer.

Now, this instance must be one in which a queen, conscious of her approaching decease, had provided for the emergency, though in mid winter and in a dark cellar, by rearing both a queen and a drone to fertilize her; and a fine day occurring in March, she must have flown, and copulation have taken place with the drone reared by her side.

Is this change of queen in winter as rare as is supposed? W. Gill.

River Falls, Wis.

* * *

When robbing has become a habit with bees, they are sometimes so infatuated with it as to neglect their own brood.—*Langstroth.*

[For the American Bee Journal.]

Yield of Surplus Honey—in Decimals!

Mr. Editor:—Among all the "Wonders of the Bee Hive," there is one that I have never seen treated of or explained in any of the numerous books or periodicals on apiculture. In fact, none of them seem to have noticed it. It is this: In making surplus honey the bees always make a round number of pounds, 5, 10, 15, 20, 25, 50, or some multiple of those numbers. I say "always," though I should perhaps say that it is the rule, which, like all good rules, has its exceptions. But the exceptions are so few that I am inclined to the belief that those who report them are honestly mistaken; or that their bees are not in good condition; or have been wrongly managed; or are in a disorganized condition; or that they guess at it.

Take the American Bee Journal and look over the numerous reports of the yield of honey in apiaries all over the country, from one hive up to hundreds, and all of them that are reported with any attempt at exactness prove my position. If I had time I would like to collect them all in a tabular form and present them to your readers, but I will only take the January number as a sample of the whole:

	Pounds.
1st—One hive, in Kane county, Ill........	25
2d—One hive, in Chicago, Ill...............	40
3d—One hive, in St. Charles, Ill..........	250
(Of this there was extracted with the machine 190 lbs.; box honey, 60 lbs.	
4th—One hundred stocks and increase, same apiary..............................	6,000
(Of this there was machine honey, 3,000 lbs.; box honey, 3,000 lbs.)	
5th—One hive, in Cook county, Ill., and increase	50
6th—Seven hives, in Virden, Ill..........	700
7th—One hive, in Fulton, Ill., (machine honey)	218

There was something seriously the matter with these latter bees; or it may be, as Mr. M. says, "I could have got more if I had employed the machine oftener." He ought to have got at least two pounds more or three pounds less. May be his "honey-slinger" wasted some.

8th—Number not given, Monmouth, Ill., average to each hive..........	110
9th—One hive, Albany, Ill., 4 swarms, and	200

If he had had a "*smelatore*," could get either 50 or 75 pounds more, one or the other.

These were, to be sure, Illinois bees; but they are not different from other bees, as you will find by looking over the reports from other parts of the world.

Here we have reported 114 hives of bees, yielding an average of 65⅚ pounds, or an aggregate of 7,593 pounds.

Joking aside, I have no doubt about this being an approximation to the truth, as no person acquainted with the parties would suspect them of untruth. It is a loose way we have gotten into of stating things in round numbers, and ought to be avoided.

Other parts of the country do not show as gratifying a return, from the fact that 1869, taking the whole country together, was perhaps the poorest for honey that has been witnessed in many years. Illinois was an exception, and the yields reported show us what we can do in good years with the same intelligent management.

The "Melextractor," it will be seen, aided largely in securing this result.

D. L. Adair.

Hawesville, Ky., Jan., 1870.

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[For the American Bee Journal.]

Preventing Bees from Killing their Young Virgin Queens.

It very often happens that young queens are attacked by the workers and killed before they commence laying. One of these cases occurred last May in a colony that had been queenless during the winter. Being supplied with a comb of brood it raised a young queen, which hatched about the beginning of May. This queen had not yet been fertilized when she was fourteen days old. Passing the colony one day about noon, I noticed great excitement among the worker-bees on the alighting board at the entrance of the hive. Suspecting there was some trouble inside, I immediately undertook an examination. On taking off the honey-board it was apparent that the queen was enclosed by the workers, and would be killed. I took out several combs, and succeeded in finding the queen. A good whiff of tobacco smoke sufficed to disperse the enraged workers and liberate the queen, and in a short time all apparently became quiet. Two hours later, however, passing that way again, I observed a renewed commotion. I once more opened the hive, found the queen enclustered again, and became convinced that the workers were bent on destroying their queen. In such cases I formerly caged the queen and kept her thus confined for two or three days after rescuing her from the angry workers, and in most instances they were not attacked again when set free. But here I resolved to try a new experiment. I took out a comb, shook off the bees, went to another hive and got a brood comb with unsealed brood, which I inserted. The workers immediately resorted to this comb, and raised a contented hum. Replacing the honey-board, I remained watching the colony a short time. All appeared right now, and the workers seemed perfectly content. On examination, only two days later, I found that the queen had begun to lay eggs, and she was attacked no more. Hence I would advise bee-keepers to insert a comb with unsealed brood and eggs into such colonies as have raised a queen after having been without brood for a long time, as in such cases the bees seem to become impatient for brood.

Adam Grimm.

Jefferson, Wis.

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The excursions of the bees to collect honey are variously estimated at from one to three miles each, and they are supposed to make each about ten trips a day.

[For the American Bee Journal.]

Queens Mating with Different Drones.

Mr. Editor:—I have been a reader of your paper for some time, but have written very little for it so far. As I see it contains a number of articles on the above subject from different sources, I will give your readers some portion of my experience.

In June last, I had a small batch of queens—from ten to fifteen in number—hatched, and mostly in one night. On the third day I saw nearly every one of them passing out and in repeatedly. On the following day I saw them going out and in every ten or fifteen minutes, for some two or three hours, and several of them showed evidence that they had met with the drones. Again, on the next day also, they passed out and in as before, and several of them came in apparently filled full from the drones. On the second or third day, I am not certain which, but think on the third, I was standing in front of my nucleii and something struck on the brim of my hat, and a queen and a drone fell on the ground fifteen or twenty inches before my shoe-toes. They lay there two or three seconds, evidently endeavoring to separate, then rose from the ground, turning around in the manner of a winding blade, striving to separate, till they went seventy or eighty feet; then, they flew up in the air, finally parted from each other, and I lost sight of them. The effort to separate was continuous from the time they fell to the ground till it was successful. On the morning of the eighth day every one of these queens was laying eggs.

I watched the queens several times this summer, and in good weather they would generally pass out and in for three days before they would stop; and I suppose they would meet with a drone or drones every time they would come out. I have no doubt that, in good weather, queens copulate repeatedly with drones, for it appears that they continue in heat for two or three days. In bad weather they get out very seldom, and they can meet a drone in such weather when passing out but once or twice, is it not natural that they will not fail to meet one when passing out so frequently in good weather?

Turn to the Bee Journal for September, 1869, page 57, for a succinct account of observations in this regard, made by Mr. Thomas C. Hill, and it will be seen that the three circumstances there stated are nearly the same as those that came under my own observation—the queen coming out for three days in succession, and in all probability she would have been seen passing out several times each day if she had been closely watched. Now, if queens mate with several drones on these repeated excursions, will not the fact account for the production of variously marked workers—some three and some two banded—from the eggs of a hybrid queen? I would think the progeny of a queen mating with a common black drone, a hybrid drone, and a full-bred Italian drone, would partake of the nature, severally, of these, which would undoubtedly make some two-banded and some three-banded.

I am of opinion that if a full-blood queen mate with a common drone, her drones are affected by the impregnation, and she will only produce mixed workers or hybrids.

In the December BEE JOURNAL, 1869, page 126, Mr. Rosenstiel refers to Mr. Thomas's new theory given in the June number. I read Mr. Thomas's article, and thought it just agreed with my experience. Mr. Dzierzon is spoken of as being the first to discover the true system or theory concerning the propagation of the honey bee. Now Mr. Dzierzon may be right in his experience, but I think he failed just a little when he took the position that the impregnation of the queen does not affect her drone progeny. I think it affects the drones the same as the workers. Now, if you take particular notice of a full-bred queen mated with a full-bred drone, the drones will show a dark color; and a full-blood queen mated with a black drone or a hybrid drone, the drones will have the yellow bands more beautiful than the full-bred drones. That is my experience of the honey bee, and I write this to aid in ferreting out the true nature of that interesting insect. ALFRED CHAPMAN.

New Cumberland, West Va.

[For the American Bee Journal.]

Queens Mating Twice — Sending Queens by Mail.

I noticed in the December number of the BEE JOURNAL, an article from Mr. D. C. Hunt, in which he says that he never knew a case where a queen had mated with a drone when she was not fertilized. He also says he thinks that I am mistaken in what I stated in regard to queens mating twice with drones. Now, friend Hunt, I will give you two instances that I think will convince you that I am not mistaken in what I have said.

Several years ago, a bee-keeping friend, who lives four miles from me, had a queen which he wanted my drones to fertilize, and so kept her in the yard with my drones. In a day or two his queen flew out and mated with a drone, and I happened to be present when she returned to the hive. This hive contained but one sheet of comb, and had glass on both sides for observation. I removed the covers from the glass, watched the bees for some time, and soon saw some of them, with the genitals of the drone, trying to find their way out of the hive. I then covered the glass, and a bee soon came out with it. As this was the first case of the kind that I had seen, I then believed, as *you* now do, that the queen was *surely* fertilized. In a day or two my friend came for his queen, and I said to him that she was impregnated and ready to be taken home. We happened to pass along there about the time when queens generally fly out to meet the drones, and, on examining the hive, found that the queen had just returned with all the evidence of having just mated with another drone.

Now, friend Hunt, I might have been mistaken in this case, but I do not see where the mistake comes in.

Here is another case, friend Hunt, where I think I can be equally positive. A bee-keeper from Manchester, N. H., was visiting me, and of course, I took him into the garden to show him my bees and queen nursery. We came to one hive, and I remarked to him that it contained a queen which was fertilized two days before, and that we should probably find her laying eggs. I opened the hive, but could find neither queen nor eggs. After looking the combs over thoroughly, I closed the hive and stepped back to one side, and the queen soon went in. She also had just mated with a drone. Now, friend Hunt, I am sure that this queen mated twice with drones.

I should not suppose that any one who has had any experience in queen rearing would doubt that such cases will happen once in a great while.

I had twenty-four queens that were fertilized as late as the 1st of October, 1869. I shipped between 400 and 500 queens by mail last season. About seven per cent. of them were lost or stolen, or perished in the transit.

On the morning of the 4th of October, I mailed twenty-one queens, and all of them perished; not on account of cold weather, but because of a very severe storm that prevailed throughout the New England States, washing away railroad bridges and otherwise damaging railroads. They were in the mail-bags for more than a week before any of them reached their destination, and some of them never reached the parties to whom they were sent.

Mr. A. Burton, of Harpers, mailed a queen to me as late as the second week in November, and we had at that time the coldest weather of the month; but the queen and nearly all the workers reached me alive, though they were "laid up" in the Boston post-office over on Sunday. Some of my customers supposed that queens cannot be sent by mail as late as the month of October. I know that they can, if they are not kept in the mail-bags until they starve. I sent them very late in October into the State of New Hampshire, and they were several days in the mail.

H. ALLEY.

Wenham, Mass., Dec. 14, 1869.

[For the American Bee Journal.]

Observations and Experiments.

MR. EDITOR:—This is my first year of bee-keeping, and of course I have been exceedingly interested in the study of their habits and the most successful management of bees; and for this purpose it seems to me your JOURNAL is a *sine qua non.*

I commenced with two hives, and have increased them by swarming and purchase to nine. Of these I have Italianized six, simply by removing the black queen and *immediately* introducing the Italian queen, after smoking the hive for a few minutes with tobacco, and dipping the queen in honey. They were all accepted, and only two made any queen cells which had to be removed. I say all, though there was one exception. I introduced a small queen, on the last of September, to a hive which had been without a queen for two weeks, having previously removed all queen cells by smoking, and *without* dipping her majesty in a honey bath. The next day I found her dead, in front of the hive.

I lost one queen—the first one I introduced—by being somewhat sentimental, for, thinking it cruel not only to displace the mother, but also to crush her, I *set her up* as a sort of queen dowager on a small scale, in a nucleus hive well stored with honey and a handful of her own subjects, behind the barn and some rods from her old hive. But in a few hours I found the little hive abandoned, and on going to the old hive, her Italian majesty was dying on the bottom board, and her rival had again taken possession. Now as she was an old queen, and had been raised some miles away, I concluded she must have been guided back by the bees which I had given to her.

I have put my hives in a dark dry room (cemented) in the cellar; but find it difficult to keep the temperature below 42°, although it does not rise to 45°. I am wintering one swarm out of doors in a *refrigerator* hive. It was an old-fashioned box concern, large, and the sides double, filled in with charcoal, opening with a lid from the top, and had been stowed away for years as useless lumber in the cellar. It occurred to me, why not turn it into a bee-hive? I soon had an opening made in one side, four inches wide through the zinc, and double walls, and fitted close the entrance with thin strips of boards to keep the charcoal in place. I then made a regular hive of $\frac{3}{4}$ inch boards 19×18 inside, and placed in it twelve frames with a very large swarm, which I obtained from a bee-tree in the woods, in September, by the kindness of a bee friend, who invited me to the "taking up." I will not recount to you the trials and wettings, and tearings in following the bee-hunter through the cedar swamp and tangled brush to his prize. Enough, that, after the tree was opened, I found her majesty sitting on a comb alone. I put her in an old bucket, brought for carrying away the honey, and held it at once to the hole where the comb had been taken out, and soon the swarm (which was large) was collected around her. It was too late in the season for them to gather any honey; I therefore fitted empty combs in the frames, and when they had fastened them, filled the cells with about two gallons of honey. As there is room enough within, on the sides of this refrigerator hive for seventy-five pounds of box honey, and for as much more on the top; and as I intend to Italianize them, clip the queen's wings, and use one of QUINBY's queen yards in the spring, I hope to be able to report success next fall.

In this section of Massachusetts there are no Italians, and no movable frame hives. We are nearly all old fogies, and the bees for a few years past are of course *ditto*. I did not intend, when I began to furnish you with so much, but perhaps some of your readers may have some old refrigerators out of use. If so you can recommend them as being good to keep the bees cool in summer and warm in winter. E. P. ABBE.

New Bedford, Mass.

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The third swarm usually leaves the hive on the second or third day after the second swarm, and the others at intervals of about a day.—*Langstroth.*

[For the American Bee Journal.]

Comb Frames to stand on Bottom Boards.

On page 118, vol. 5, of the BEE JOURNAL, a correspondent asks for Mr. Quinby's plan for using strips of tin, and causing frames to stand on the bottom board. I do not know how Mr. Quinby's hive is constructed, but will try to tell the readers of the JOURNAL how I have attained similar results.

In order that my description may be understood, it will be necessary to describe a part of Adair's section hive. In doing so, however, it is not for the purpose of recommending his or any other patent hive. I do not know what is covered by his patent, as I have never seen his claims stated.

The brood chamber in his hive is formed of vertical sections or rims, each one and a half inches wide. They are nailed together, one nail in each corner, the top and bottom pieces to the ends of the side pieces, and projecting in front three-sixteenths of an inch, and setting back from the edge of the side pieces the same distance in the rear. When two of these sections are placed together, the projections of one fit over the shoulder of the other, thus holding them true horizontally. The sections can be made of any desired dimensions. Ten inches deep and thirteen inches wide, in the clear, is the usual size, I believe. In addition to these, there are two shallow sections, or frames, made of the same size, and filled with glass or wood to close the ends of the brood chamber, which, besides these, should contain ten or twelve sections, according to the size used. The frames or sections run from side to side. The honey boxes are formed in the same manner, and composed of similar sections, only smaller, usually five by six inches in the clear.

Now, I allow for the brood chamber, the tops to project over the ends of the side pieces three-eighths ($\frac{3}{8}$) instead of three-sixteenths of an inch. The slats to form the sections should be half an inch thick, and one and a half inches wide. Set your gauge three-eighths of an inch, and having cut your slats the length required, make a gauge mark three-eighths of an inch from one edge of each piece; then, with your knife, chisel, or whatever tool you use, commence within one-fourth of an inch of each end of the piece on the edge on which the gauge mark was made, and cut sloping toward the centre of the piece till you reach the line made by the gauge. This will leave the slat one and a half inches wide at the end, forming a right-angled triangular bracket-like projection at each end. Now, have another triangular somewhat saw-toothed projection in the middle of the slat, to support the strips of tin. Do the same with top, bottom, and side pieces. You will now have your slats one and one-eighth of an inch wide, except at the ends and one point in the middle, at which points they are one and a half inches wide. Now, in putting them together, nail the tops and bottoms to the ends of the side pieces; place them so that the projections of the side pieces will be *toward* you, and the projections of the top and bottom pieces *from* you. Allow the projections of the top and bottom to extend over the ends of the sides three-eighths of an inch (the depth cut out) in front. When thus put together, you will have sections or frames one and one-eighth inches wide, (the straight portions opposite each other,) the projections of the top and bottom directed backward, while those of the side pieces are directed forward. When these frames are put together, you will have the projections at the ends of the tops and bottoms fitting over the shoulders of the sides of the next sections, and against the straight side of the next top and bottom pieces. Now procure strips of tin or thin lumber, and tack or otherwise fasten them on the outside of the projecting points and flush therewith, thus covering the openings made by the wood removed. Place as many together as will form a hive of the dimensions required; add shallow frames containing glass or wood; close the ends, and you will have a closed box or brood chamber. A narrow strip of tin on each side, extending across all the sections and fastened to the terminal ones with the aid of the shoulders, will hold all firmly together. Now if you wish to use section honey boxes, use slats as thin as possible; cut out one side of each piece, the same as for the brood chamber, only omit the central projections. In putting together, allow the tops and bottoms to extend only three-sixteenths of an inch for shoulders in the honey boxes. Add sections until the box contains the same number as the brood chamber, and close the ends with shallow frames with glass in them. When you wish to use the boxes, remove the strips of wood, closing the holes in the brood chamber, and place two boxes on each side, so that the openings will match. Allow the boxes to communicate with each other, as well as with the brood chamber; place two boxes on top; or if you want still more box-room, use two tiers on the top and three on the sides, allowing the third tier on the sides to communicate with the first tier on the top, as well as with the tier beneath them. This will give you ten boxes, the length of your brood chamber, all of which can be separated into sections containing one comb each, and holding in the aggregate, if they are five inches high, six wide, and eighteen long, (twelve sections,) one hundred and eighty (180) pounds.

By this arrangement the combs in the boxes are but an extension of the corresponding combs in the brood chamber, and every comb in the boxes will be on a line with the corresponding comb in all the other boxes and the hive—forming as it were one sheet of comb, divided in the boxes into pieces 5 × 6 inches. The spaces between the combs being continued through the whole series, the corresponding combs in all would seem to the bees but an extended single comb. This would, no doubt, cause brood to be reared at times in some of the sections of the boxes; but as each comb can be separated from the rest, all sections containing brood can be formed into a box, the brood allowed to hatch, and the combs be used as guides in other hives. Instead of allowing the frames or sections of hives and boxes to rest directly on the bottom board, they should be placed on strips of wood $\frac{1}{2} + \frac{1}{2}$ inch, nailed to the bottom board. And if desired, the strips of tin or wood connecting the bottoms of the sections can be omitted, and the bees allowed to pass under the bottom pieces, as in suspended frames.

For wintering such a hive in the northern States, it would be best to make a plain box, without bottom, and with one end left open, of a size that would fit closely over the brood chamber, and could be so placed after the boxes are removed. I have not attempted to describe any form of outer case for the hive and boxes, or to give any definite dimensions, only designing to give the essential features peculiar to this hive, expecting every one to be governed, in regard to size, &c., according to his own experience and judgment, locality, &c. The principal objection suggested to the form of sections used by Mr. Adair was that bees would be liable to be crushed in closing them, as in the leaf hives of Huber. By cutting out, in the way explained, I have attempted to remedy this fault. It will be impossible to crush a bee, except it be directly under one of the points when closing, and these can be made so small as to make it almost impossible to crush even a single bee. The strips of tin or wood do not close *against* another surface, merely reaching *opposite* the outer corner of the next section. I prefer strips of wood about three-fourths of an inch wide, so fastened as to be easily removed, as they will not be used during the honey harvest, except on honey boxes, for closing such apertures as do not communicate with the hive or another box. It is not absolutely necessary that the sections forming the boxes should have a portion cut out on all sides, top and bottom, only removing on the sides, top or bottom, that may communicate with other boxes or the hive—leaving the rest closed. But I prefer having all honey boxes alike, so that they will fit wherever placed, and close with a strip such sides as are not wanted open. A hive of this form can be made up to any dimensions, by adding to it on the sides and top, and yet no piece of comb without the brood chamber be larger than five by six inches.

As I said before, I do not know Mr. Quinby's plan of hive, but can scarcely doubt that his is better than mine. Yet, since making some of these hives, I find them so easily made, work so easily, and affording as they do unlimited expansion, I prefer them to any hive I have ever seen. If experience confirms my expectations, they will at least prove superior for surplus honey. For raising queens and building up colonies, I doubt if any thing can excel Mr. Gallup's form of hive, but unfortunately it affords poor facilities for obtaining the largest yield of surplus honey. And this is the case with all the forms of suspended frame hives. I feel confident that frames so arranged as to be independent of an outer case for their support, will in some form be adopted into general use, sooner or later. There are two faults which all loose frames have, one of which seems to be irremediable. The first objection is their want of stability, being unfit for transportation; the other is, the vacant or unoccupied space around the combs—not because the circulation of air is detrimental, but because it affords a vast amount of room for idle bees to loaf in, when they should be at work in the boxes. In the best forms of frame hives this loafing space amounts to one-fifth or one-fourth of their whole capacity. We want a hive in which the bees will all be compelled to stay on the combs, or in spaces in which combs are to be built. For those who desire to raise queens, or rapidly multiply stocks, it would be well to have a long Langstroth hive, that could be divided into four apartments when necessary; and by having an entrance at each end and one on each side, communicating with the respective apartments, there would be no risk of losing queens by mistaking the wrong entrance. The frames could be made of the proper size to fix in the sections, after sawing off the projecting shoulders; then, as stocks were built up, they could be transferred into the section hive above described, and the case of the long hive used for other nuclei.

As to the right to use the hive I have attempted to describe, it is and ever will be free from patent, so far as I am concerned. Whether it necessarily conflicts with Mr. Adair's patent, I do not know. I purchased an individual right to use his hive and boxes, as his price was moderate and he seemed fair in his business transactions. I procured the right principally on account of his honey boxes, as they are almost indispensable in our markets; the sections forming a box of themselves, having the advantage over small frames of protecting the surface of the comb from injury, and yet being divisible into single combs, the same as frames.

There is probably no greater happiness to a good and true man than that of being serviceable to his fellow creatures, without the hope of fee or reward. Let us, therefore, all try and contribute our mite, that we may perfect a hive and system of bee-keeping free to all, and cease to patronize the cormorants that have for years plundered the industry of the country. Cease to patronize patents, and they will soon cease to be the disgusting nuisance they now are; and perchance we may be able to induce patentees themselves to adopt some other policy. The honey-emptying machine has (thanks to the Germans) come to us untouched by the grasping hands of patent venders; and its rapid success gives hope of improved hives and system of bee-keeping, if free and unpatented.

I fear I am occupying too much of your space, yet I cannot refrain from whispering a word of advice to one of your correspondents, hailing from Des Moines, Iowa. He has written three communications, (some dozen columns in all,) to show, among other things, that the bee-cholera or bee-disease prevalent last year, besides every other ill that bee "flesh is heir to," was caused by the want of a certain-to-be patented hive. And by reference to the September number we find the very contrivance he is "talking" about, described by Mr. Owen Davis as the "Double Combined Movable Comb Hive," patented in 1867, *and yet pending*. Now if Mr. D. will turn to page 553 of the Report of the Department of Agriculture for 1863, he will find his contrivance described by Mr. Richard Calvin, of Baltimore, Md. I could add some other facts to show that the use of two or more frames, placed within one larger one, is not new; but as I have neither seen or heard of any "startling wonders" resulting from their use, I dismiss the subject, as undeserving further consideration.

I have something more to say on the subject of patents, which, with the indulgence of the Editor, I may give in another communication, as this one is full long already.

Will not Mr. Quinby favor us with a description of his hive, if experience has confirmed his judgment as to its utility? Most bee-keepers have entire confidence in his honesty and unbiassed judgment; why then not sacrifice the time and trouble necessary to attain so great a good? J. M. WORDEN.

Mobile, Alabama, Dec. 28, 1869.

[For the American Bee Journal.]

Disturbing Bees.

What is the average number of times a good bee-keeper will "go into" (open the hives and examine) his bees, in the course of the season? —J. G. W., *Chillicothe, Mo*, July 25, 1869.

A good bee-keeper can generally tell if anything is needed by his stocks of bees without "going into" his hives; and, generally, need not "go into" them more than four times during the season: Once in the spring to clean the hives and regulate the combs, bees, honey and brood—that is to equalize them; then once or twice at swarming time, and once in the fall, to see that they are all right for winter. The latter time or trouble may be avoided generally by previous diagnosis, without "going into" the hives.

It will pay a better bee-keeper than I am to "go into" the hives, say once a week, unless his time is worth more than one or two dollars a day, as he will see places and items that may be improved; and he may study and work out something valuable, as there is no branch of science that has yet reached perfection.

If the operator can learn nothing by opening a few hives every day for six months, he holds an enviable position. I would like to see a person so far in *advance*, or so far behind others, that he cannot learn something more. Even if he should learn nothing from any one operation, he may console himself by the reflection that his time has been more profitably occupied than it would have been by frequenting saloons or places of dissipation, to the neglect of his stock or his home. J. M. MARVIN.

St. Charles, Ill.

If the spring is not favorable to bees, they should be fed, because that is the season of their greatest expense in honey, for feeding their young. Having plenty of honey at that time, enables them to yield early and strong swarms.—*Wildman.*

Beware of demoralizing bees, by tempting them to rob each other.

[For the American Bee Journal.]

Amateur Bee Culture.

Although much has been written on the science of bee culture, yet but few of those who engage in it meet with success. It is with bee-keeping as with every other branch of industry, those who engage in it must understand it, if they expect to succeed.

If one desires to engage in bee-keeping, he should, in order to be successful, thoroughly acquaint himself with the nature and habits of the bees. He then understands how to select a situation for an apiary, and provide for their wants. He sees the advantages of frame hives, and is enabled to select intelligently from the many placed before the public. Like a master builder who thoroughly understands his work, he commences bee-keeping, knowing what to do. Such a one is sure to succeed. In my experience, however, I have found only now and then one who commences in this way. Ordinarily, almost every one commencing to keep bees is entirely ignorant of their nature and habits, and frequently all the knowledge acquired is got by slow experience. Is it a wonder, then, that so many bee-keepers fail to be successful? Let any one who intends to keep bees first purchase some practical work on bee-keeping and thoroughly read it, acquainting himself well with the theory before he commences. Let him, in commencing, purchase not more than two or three colonies; and even then he will find his bees increasing faster than his experience. It is a sad mistake that many fall into, when commencing bee-keeping, to purchase a large number of stocks. It will not do for one comparatively well read up in bee-keeping, but has not the experience, much less for one who has no knowledge whatever of bee culture. A few years since a man entirely ignorant of bee culture was suddenly attacked with "*bee on the brain*," and as a remedy purchased a thousand colonies and commenced bee-keeping with visions of honey before his eyes; and the result was he failed. Several similar instances have come under my observation, even when only fifteen or twenty colonies were purchased. Two or three stocks are quite enough to commence with, and they ought not to be purchased unless one has some knowledge of bee-keeping, or at least a practical work to guide him. But with a fair knowledge of bee-culture and the use of frame hives, rightly constructed, success in bee-keeping is certain, when proper attention is given to it.

J. H. THOMAS.

Brooklin, Ontario

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The greatest favorites of the bees, in early spring, appear to be the catkin-bearing shrubs and trees, the willow, hazel, osier, &c., from the male flowers of which they obtain the pollen, and from the female the honey.

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In working among bees, woollen gloves or mittens are objectionable, as everything rough or hairy has an extremely irritating effect upon them.

[For the American Bee Journal.]

History of our Honey-Emptier.

MR. EDITOR:—Your readers call for facts rather than fancies, though most people take more pleasure in relating their successful exploits than their failures, and it is easier to write theories than to practice them.

I think as much can be learned from an account of a failure, as from a success, if the reasons for the failure are given. Therefore I think correspondents should give both sides of the question and I will endeavor to do so myself.

That we must have a honey-emptier was a settled question, but how we were to make it was another thing. The JOURNAL contained the bill of stock required in making several different styles, none of which just suited.

We could not get a suitable tin-can made here for less than four dollars, so we devised a plan similar to that described in the last number of the BEE JOURNAL, as patented by Mr. H. O. Peabody, only we did not carry the idea quite so far as he has done.

We made the "basket" of gauze wire and hoop iron riveted together and fastened to the standard with iron braces. We then made two shields of tin to go over the two sides, covered with wire cloth, in order to catch the honey and conduct it to a shallow tub in which the whole thing was to revolve. When ready for use we brought in some well filled comb, but found that we had not got the joints at the corners tight enough to keep the honey from flowing on the floor. As we wanted to use the machine immediately and had no tins for the remaining two sides, we concluded to dispense with the tins entirely, and putting it in a wooden cask, try it in the "good old way."

We supplied it with the gearing of an old apple parer, and very soon extracted one hundred pounds of buckwheat honey.

Our only trouble now was in uncapping the cells. We tried everything within our reach, from a razor to a butcher knife, but in all made rather bad work. We then concluded that somebody must have for sale knives suited for the purpose, as correspondents, in describing the workings of their machines, say nothing of trouble in this direction. We looked over the advertisements in our BEE JOURNAL, but could not find them mentioned. Thinking that Mr. Langstroth would be apt to keep them, if anybody did, we enclosed him a two dollar note, with a request to send one by mail, if he had them. The money was immediately returned, with a note stating that he had none on hand, but thought we could procure one from Mr. M. M. Baldridge, St. Charles, Ills. We accordingly enclosed two dollars in a letter directed to Mr. B., requesting him to send us a knife as soon as possible, as we wished to use it immediately. This was about the 25th of September, and after waiting patiently about two weeks our hope of ever seeing knife or money again began to vanish. We then sent him another letter of inquiry in regard to the fate of the first.

Some time before this, our friend Mr. S——, of this place, invited us to come up and try our machine on some honey which he intended to "take up," as he wished to save the comb to use in some of his frame hives. We informed him that we had sent for and daily expected to receive the knife, without which we could do but little. Two weeks more passed away, and we neither heard from our money or the letter of inquiry concerning it. Friend S. had taken up his bees, (I am sorry to say that this system is still practiced in this neighborhood,) and was ready for us to make our visit with the machine. He thought that his father had a knife which would answer the purpose, and as I was to go by his house I was to stop and get it. Accordingly I loaded up the machine and started, but when I came to stop for the knife, the old gentleman informed me that the one he had was nothing but a piece of hoop iron ground off to cut cheese curd and would probably not suit our purpose.

Arriving at the scene of action, the machine was set up and the honey brought out. We first tried a frame with a thick comb of buckwheat honey, which had been taken from the hive some time previous. After having had two hands at work on it for about half an hour, it was pronounced "uncapped," although it looked as though mice had done it. It was put into the "Extractor" and the process of whirling began. But we had forgotten that we must have another comb on the other side to balance it, as it was very thick and heavy. So another half hour was spent in *uncapping*, and then the turning again commenced. But the honey did not seem inclined to fly. We just began to see the difference between taking honey directly from the hive in warm weather, and taking it from a cold room, where it had lain until it was as cold and stringy as tar. That our honey must be warmed seemed self-evident. So it was taken out and perched upon a box behind the stove to warm, while we directed our attention to uncapping combs taken from the hives.

It was now getting well on towards nine o'clock. Mr. S. was to start for Scranton early next morning, and intended taking the honey there to market. Six or eight hives were piled up in the room, ready to have their contents "extracted," which, of course, it would not take long to do *by machinery!* Mr. S. remarked that "the frame behind the stove must be nearly warm enough," when " spat" went something in that direction, and on looking, it was found that the honey had got warm, broken from the frame, and fallen down in a heap behind the *wood-box!* This so excited him that he knocked the lamp chimney off with his knife, and dropped another piece of honey on the floor. After trying until all concerned were satisfied we drew from our machine about one pint of strained honey, to say nothing of what was *drained* on the floor. In fact we had a *sweet* time generally. We came to the conclusion that *cold* honey in *new* comb, uncapped with a butcher knife, was not just what the "melextractor" was calculated for. Take the honey from the hive before it is capped, or get it decently uncapped in warm weather, and it works like a charm.

Two or three days after this, I (very unexpectedly) received a letter from Mr. Baldridge, dated October 25th, containing fifty cents, and stating that he had a style of honey knife which worked satisfactorily, which he sold for one dollar and fifty cents, and that he would mail one to us some time "this week." About two weeks after this I received a—*honey knife.* It is made out of the best quality of *wrought iron*, fastened into a common turned wooden handle with melted lead. Mr. B. says it will work satisfactorily, and I hope it will, as that is all that will be required.

Will those who successfully use the "Smelatore," and know how to uncap the cells for its use in any decent length of time, please describe the *modus operandi?* With us it is the one thing yet needful. I have not yet had a chance to try the knife received from Mr. Baldridge, as it reached me so late in the season. Though it may work well, I must say to him that I do not admire his style of punctuality, as I think *six* weeks altogether longer than necessary to get returns from Illinois.

Mr. S., I believe, concluded to sell his honey *in the comb*, probably consoling himself by thinking that it would carry nicer and sell much better in that shape.

I. F. Tillinghast.

Factoryville, Pa., Jan. 4, 1870.

[For the American Bee Journal.]

Superseding Fertile Workers.

Mr. Editor:—On page 144 of the January number of the Journal, I see an article from Mr. John S. Rose, in which he gives his mode of treating a colony of bees containing a fertile worker. He states that he was successful in introducing a queen, after subjecting the colony to a dose of puff-ball smoke. Having less faith in that kind of treatment than I perhaps should have had, I did not test its merits in either of the cases to which I am about to refer; nor do I know that I ever will test it, so long as the mode of treatment to which I subjected two colonies, during the past season, proves successful.

The first was a colony which, from some cause unknown to me, lost its queen in the latter part of March. They failed to rear a young queen, and in a short time I found eggs deposited in the cells of both worker and drone-comb. I found as many as four eggs in one cell, and on close examination I was satisfied there was nothing in the shape of a true queen in the hive. This further convinced me that I had a fertile worker to deal with, or some kind of an egg-laying creature or creatures that did not properly understand the bee-raising business—there being more eggs laid in one cell than could be matured in so small a space. How to get rid of this kind of egg-laying creature puzzled me exceedingly. I thought of puff-ball, but being too much of a sceptic with regard to its effect as a remedial agent in such cases, I determined to adopt some other mode of treatment. It being early in the season, I had no queen to give them. I therefore gave them, from another hive, a frame containing worker brood in various stages of development; having first taken from them such combs as contained eggs laid by fertile workers. They at once took possession of the brood which I furnished them, and reared a queen which became fertile. Thereafter the colony began to prosper, and continued to do so through the season.

Later in the season, I removed the queen from another colony and inserted a queen cell in her stead. The young queen hatched, but was lost I suppose on her bridal tour, as I never saw her after she was five or six days old, although I looked for her repeatedly, thinking she might possibly have escaped my vision. But being finally convinced that there was no queen in the hive, and finding, several days after the repeated searches, eggs deposited promiscuously in the cells, and ranging in number from one to half a dozen in a single cell, I was convinced that I had another case of the fertile-worker complaint to deal with. I began operations as in the first case, by taking from them all the combs containing eggs; but, instead of giving them worker-brood, as in the previous instance, I gave them a finished queen cell, which they destroyed. I repeated my former operation by giving them another, which was received and the queen hatched. As in the other case, she became fertile, and brought out the colony in a prosperous condition.

How such a course of treatment would answer in another case of the kind, I am not prepared to say; but that it has proved successful with me in two instances is certain. Nor do I pretend to know more about the philosophy of this kind of treatment (if treatment it may be called) than that connected with the use of puff-ball. Still, I have wondered since my success in those two cases, whether it may not be that all colonies (and especially the Italians, which always defend themselves when queenless with admirable vigor) become very hostile to all strange bees or queens, and refuse to recognize them until they are themselves severely dealt with by the use of puff-ball or of some other stupefying agent. I wish to state here that I do not believe that in either of the above cases all the eggs found were laid by one fertile worker. I know that in the period of twenty-four hours there were more eggs laid than could possibly have been laid by a queen at the head of a populous and in all respects prosperous colony. Besides, during my searches for a queen in those two cases, and especially when I was about convinced that there was no queen present, and began to think of and look for a fertile worker, it occurred to me that if fertile workers come, as it is claimed they do, (namely, by accidentally or otherwise being fed on a small amount of royal jelly) they ought not only to resemble a queen in disposition, but also in shape and locomotion. Thus it was these features I looked for, and I also thought I might possibly find her engaged in the act of depositing eggs, if neither of the above-named marks of difference would enable me to find her. I therefore set myself to searching, and after some time felt confident I had found her; and I yet believe that I found some, but not all. Her conduct somewhat resembled that of a queen while she was walking over the combs; the bees also appeared to bestow upon her some of their usual marks of honor and distinction. But in shape she bore no resemblance to a queen. After walking over the combs for a time, I discovered her looking into a cell and afterwards insert her abdomen in it like a queen in the act of ovipositing. I caught and killed her, and then looked for more, which I found engaged in similar acts as the first. Now, to satisfy myself about this matter a little further, I opened several other hives containing fertile queens, and in no case could I discover a worker endeavoring to play queen by crowding her abdomen deep down into a cell, as though she meant to lay an egg.

These observations led me partially to the following conclusions: *First*, that in cases where Italian colonies lose their queens during the breeding season, we are almost sure to find fertile workers. *Secondly*, that in all such cases we may look for not only one fertile worker, but we may expect them to be numerous, or that there will at least be several found in a hive. And *thirdly*, that by subjecting a colony to such treatment, such as the smoke of puff-balls or other stupefying agents, they almost invariably accept a fertile queen, and the deposit of bogus eggs ceases. I further conclude that if all their combs and eggs are taken from them and worker brood given, they will rear a queen, and by repeated efforts they may be induced to accept a queen cell, provided the young queen therein has not yet begun to pipe. If she has, I think the bees will be likely to destroy her, unless they be first stupefied.

Just how the fertile workers originate I do not pretend to say or know, but I suspect that if any get the royal jelly during the grub state quite a number get it. And it may be that where a queen is taken from a colony the bees give such food to many larvæ, and as a result raise no queen. I hope that bee-keepers who may have such colonies to deal with, will put them in observing hives, and by repeatedly noticing their conduct ascertain if possible what kind of bee or bees lay those eggs. I do not claim by what I have observed and have related, to have definitely established the fact that these eggs are laid by common workers, although I have strong suspicions that many workers do possess the ability to lay eggs, and will do so when the colony is not in possession of a fertile queen.

If opportunity should be afforded me during the coming season, I will endeavor to look a little further after the fertile-worker part of the bee creation, and if possible ascertain under what kind of circumstances such colonies accept of queens or queen cells. And I should be pleased to find out certainly under what circumstance, or from what causes, they reject them. Now this may be more than any bee-keeper (myself not excepted) may ever be able to discover, but I shall endeavor not to injure the profession of bee-keeping in making my observations.

GODFREY BOHRER.

Alexandria, Ind.

[For the American Bee Journal.]

Is there a Four-banded Variety of Italian Bees?

The Baroness of Berlepsch, in her "Five Questions Answered," vol. 5, page 141, of the BEE JOURNAL, answers question 1, respecting the "three yellow bands," thus: "The Italian bee, bred in Italy, has generally but two yellow bands, and, including the narrow strip next the thorax, three. But Dzierzon has raised a much more beautiful race. The workers of his full-blooded bees have three yellow bands, *exclusive* of the narrow strip."

This statement must be surprising to a number of queen-breeders who have purchased from Dzierzon. A queen bee which Rev. L. L. Langstroth showed me on my visit to his apiary, five years ago, as one imported from Dzierzon, had no such worker progeny. The workers showed only three bands, the narrow strip near the thorax included. They differ only from those reared by myself from direct imported queens in having a brighter color, and with the third stripe somewhat wider.

Italian worker bees reared by Mr. Dathe, in Eystrup, Hanover, (whom I visited on my trip to Italy, two years ago last September,) reared from a daughter of a queen purchased from Dzierzon at one of the great Bee-keepers' Conventions in Germany, had no more and no wider yellow bands than my own Italian bees which I had taken along for comparison; and those had but three bands, the narrow strip included.

Shall we draw from such facts the inference that Mr. Dzierzon sells and sends off as full-blooded, stock that is not such? I, for one, cannot do so. I am well aware that occasionally a queen is produced, some of whose workers show, when much extended, a very narrow fourth band; yet I cannot believe that Dzierzon would sell an inferior queen, whose workers do not come up to the standard of full-blood Italians. But no correspondent or writer has ever, to my knowledge, made such a statement as that of the Baroness of Berlepsch. The Rev. Mr. Kleine, in his article on the purity of Italian bees, (BEE JOURNAL, vol. 2, page 17,) says: "Those workers are pure whose first three abdominal rings are bright-orange or buff-colored; the first being slightly, the second more strongly, and the third broadly bordered with black, while the terminal rings are fringed with a gray or whitish down." Dathe, another celebrated German apiarian and breeder of Italian bees, in his pamphlet "Directions for Italianizing and breeding the Italian bee," page 9, says: "Of the three abdominal rings of the worker-bees, the first two are orange-yellow colored; the third one, according to greater or less purity, is more or less yellow or whitish; the succeeding ones are whitish." Neither he nor Mr. Kleine anywhere remarks that Dzierzon's bees have *four* bands, or three without the narrow one near the thorax. I think it would have been the duty of both of them to mention it, if it were so; and they there doubtless as well acquainted with the markings of Dzierzon's Italians as the Baroness, since each of them procured queens from him repeatedly. It is my opinion, therefore, that the Baroness must be mistaken in this matter. If, however, Dzierzon, or anybody else, has succeeded in propagating Italian queen bees, all of whose workers have four yellow bands, and whose queen progeny—daughters, granddaughters, and great-granddaughters — again produce similar four-banded workers, then I should like to purchase a queen from such a stock; provided she be as prolific as Italian queens whose workers show only three yellow bands. A. GRIMM.

Jefferson, Wis., Jan. 10, 1870.

[For the American Bee Journal.]

A Bee Puzzle.

In the December number of the BEE JOURNAL, page 117, under the head of "Introducing Queens," a correspondent is puzzled, and so am I. But he is puzzled in a different manner from myself. In his case the introduced queens were the ones that produced the eggs. Of this I have not a particle of doubt. I have had at least twelve cases similar to the one he mentions. In October, 1863, after the native queens had stopped breeding, I removed five queens, and introduced hybrid queens in their stead. These queens were accepted apparently all right. All five commenced breeding; and, in from eight to twelve days, four of the queens were destroyed, and young queens raised from the introduced queen's eggs, in from twenty-four to thirty-one days from the time the queens were introduced.

These being the first cases of the kind, I did not observe as closely as I should have done. But, since then, I have had the best opportunities for observation. In twelve cases of introducing queens, when the native queen was not breeding, I have finally lost all but two. I have in those cases introduced the queens by various methods, so that the mode of introducing did not have any influence on the results, so far as I have been able to observe.

August 12th, 1869, I received a queen from Dr. T. B. HAMLIN, of Edgefield Junction, Tennessee, by mail; and she was as handsome a queen as I ever saw, of a bright golden color throughout the entire length of the abdomen—the very apex of which was only slightly browned. I introduced her to a hybrid stock. There was no brood in the hive at the time of introducing her. She commenced breeding very rapidly, and I examined her daily for five days after introducing her. On the ninth day I examined again, and she was gone. She had filled four frames full of eggs. There were five queen cells started, and an egg in each. Those five queens all hatched out, and were perfect duplicates of their mother. Four of them were lost in being fertilized, and one proved to be a drone layer. (Here I may remark that I have only succeeded in having five queens properly fertilized this season.) The workers from the old queen were perfect beauties. What puzzles me is this: in introducing a queen at any time when the queen is not breeding, or when there is no brood in the hive, why do the bees accept her temporarily, feed, nurse, and pay every attention to her, and then, after the lapse of from eight to twelve days, destroy her and raise another from her eggs? If they are satisfied with her for eight days, why not for eight months? I have not been able to solve this question, though it has puzzled me not a little.

I may here state, that I have had considerable correspondence with Dr. HAMLIN, and do not hesitate in recommending him to the confidence of the public, as a queen breeder. Many of us will want queens early, and he can furnish them from one to two months earlier than any northern breeder. Every good honest breeder added to the list is so much gained by the public; and judging from the inquiries already received, the demand for queens next season is going to be fully up to the supply. E. GALLUP.

Osage, Iowa.

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The Dripping Honey-Comb.

Did you ever reflect that the great woods about us, where we delight to hold our picnics and take our summer walks, used to be infested by many hurtful wild beasts? Yet we never hear of a bear, or a panther, or a wolf being met in them now. It is hardly possible that they have retreated in a body before the face of the white man, as the Indian has, but they have been exterminated. We can never realize the hardships and dangers our forefathers passed through to make this pleasant land such a delightful home for us.

We can see, too, the might of civilization, and the powerful resources it can bring to oppose all the cunning and all the strength of the fiercest wild beasts. A little winged bullet can deal a death-blow to the powerful panther or to the enraged bear. Even a watch-fire will keep the wolf and various other animals at bay the whole night long. God gave to man dominion over all the beasts of the field, and even the fierce lion and tiger have been tamed by his skill; yet is it not strange when men can do so much that they have never invented some way of taming that unruly member, "the tongue?" "But the tongue can no man tame," saith the Apostle James; "it is an unruly evil, full of deadly poison."

Oh, what bitter, angry words sometimes roll off from it so glibly! How they set on fire whole communities, and work a mischief that years cannot undo! There is only one way to master it. That is to give it all up into the control of the Lord Jesus. He can tame it, He can keep the lips pure from all evil-speaking. He can put into the mouth only pure, good words, that shall do good to all men.

"Pleasant words are as a honey-comb, sweet to the soul and health to the bones."

Every child knows how nice a clean white honey-comb is, with its dripping pearls of sweetness. But oh! it is not half as sweet as those lips which drop only the pearls of loving, gentle words.—*Child's World.*

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Water is indispensable to bees when building comb or raising brood.

[For the American Bee Journal.]

Several Items.

INTRODUCING QUEENS SAFELY.

Place a drop of the same kind of scented honey or feed that the bees are fed with, on the queen's head only, so as to cover her antennæ. Then the bees cannot recognize her, at least until they remove the feed, and by that time they are in no disposition to sting. Whereas, if the feed be dropped on any other part of her body, it annoys her; and she does not like to be assisted unless the obstructions are on the head.

YOUNG QUEENS.

Are there cases of young queens being fertilized at the time of or before going out with a swarm?

MORE QUESTIONS.

Do bees work on the different varieties of the wild mint, or the kinds cultivated for distillation or other purposes? If so, what is collected, and what amount?

Do bees work on the Osage Orange, the Black Locust, (three-thorned Acacia,) or the Mountain Ash? J. M. MARVIN.

St. Charles, Ill.

☞ Bees gather honey from all the mint family, but none of the varieties yield it plentifully, though what is obtained is agreeably aromatic. Blossoming continuously from July to September, and growing in moist grounds, they are of some importance at a period when other supplies are cut off by drought.

The blossoms of the honey locust are said to yield honey, though we have never seen bees working on them. They are yellowish green, small and inconspicuous, and arranged in spikes. The pods are filled with sweet pulp between the seeds when ripe, which *boys* are fond of, but we do not know that *bees* partake of it. It seems to have been a favorite with General Washington, as there are many fine and large old specimens in the grounds of Mount Vernon.

Whether the blossoms of the Mountain Ash or the Osage Orange yield honey, we are unable to say.—ED.

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Comb Guides.

The following is the article referred to in our last number, as showing conclusively that the bevelled edge or triangular comb guide is no new invention:

Extract from "OBSERVATIONS ON BEES," by John Hunter, Esq., a paper read before the Royal Society of London, Feb. 23, 1792, and published in the Philosophical Transactions, vol. 82, page 128.

"As one perpendicular comb of the whole length "and height of the hive, in the centre, dividing it into "two, is the best position for exposing their operations, it is necessary to give them a lead or direction "to form it so; therefore it is proper to make a ridge "along the top, from end to end, in the centre, "between the two sides, for they like to begin their "work from an eminence; if we wish to have them "transverse or oblique it would only be necessary to "make transverse or oblique ridges in the hive."

Clearly, Clark's patent is worthless, as the Courts will decide if appealed to.

◆

As all muscular exertion requires food to supply the waste of the system, the more quiet bees can be kept, the less they will eat.

THE AMERICAN BEE JOURNAL.

WASHINGTON, MARCH, 1870.

☞ Though we have enlarged the JOURNAL, by adding four pages monthly, making it a twenty-four page pamphlet, clear of advertisements, we still find ourselves cramped for want of room, and compelled to "hold over" several communications. We would suggest to correspondents to condense their articles as much as possible. Readers require variety in our columns, and articles compressed and brief are all the more likely to be carefully read.

Meeting of Michigan Bee-keepers.

☞ The Michigan Bee-keepers' Association will meet at Lansing, (Mich.,) on the 23d and 24th of this month, (March.) As it is proposed then to make arrangements for holding a *National Bee-keepers' Convention*, it is desired that there be a large attendance of bee-keepers from other States, and from the British Provinces.

After an unusually long delay, we have received the Report of the proceedings of the German Bee-keepers' Annual General Convention, held in the city of Nuremberg on the 14th, 15th and 16th of September last. There were present four hundred and fifty-three bee-keepers and persons interested in bee culture. Among them were sixty-seven deputies from various apicultural and agricultural associations, and a number of ladies. A large part of the first day was devoted to celebrating the twenty-fifth anniversary of the establishment of the "BIENENZEITUNG," and conferring merited honorary marks of distinction on Mr. Seminary-prefect Andrew Schmid, who was mainly instrumental in starting the paper, and who has edited it uninterruptedly for a quarter of a century. Want of room prevents us from giving a detailed account of what was done on the occasion, when there seems to have been a general rivalry to manifest high appreciation of the services rendered by the veteran editor. Though some of the more prominent bee-keepers of Germany were unable to attend the Convention, the discussions were spirited and exceedingly interesting. We have marked a number of passages for translation.

We are at all times disposed to allow correspondents full scope in the expression of their views and opinions, however much we may dissent from them, and ordinarily let them pass "without note or comment." But, in a matter so important in bee-culture as the fundamental principle of the Dzierzon theory, of late so frequently impugned in this country, we cannot properly refrain from reiterating our own convictions on suitable occasions. Thus, we hold it o be a matter settled physiologically that impregnation does not affect the drone progeny of a queen, and that, consequently, in every case, the drones produced by a queen are the infallible indicators of her *own* character and quality. If a supposed full-blood Italian queen be fertilized by a black drone, and the drones produced by her show any symptoms of hybridization, however slight, set her down in your register as having herself unquestionably an original or inherited taint. Her drones are worthless for breeding purposes, where the introduction or re-establishment of the pure Italian race is aimed at; and she is incapable of producing even such hybrid workers as the breeder looks for, under the mistaken notion that she was pure prior to fertilization.

We have received copies of the following recent publications:

VICK'S ILLUSTRATED CATALOGUE AND FLORAL GUIDE, from James Vick, the veteran seedsman, Rochester, N. Y.

ALLEN'S SEED CATALOGUE for 1780, from R. H. Allen & Co., 189 and 191 Water street, New York, N. Y.

Annual Trade List of the CHERRY HILL NURSERIES, of Hoopes, Bro. & Thomas, West Chester, Pa.

The PUBLIC LEDGER ALMANAC for 1870, from Geo. W. Childs, Philadelphia. A copy of this almanac is presented to each subscriber to the Public Ledger.

PREMIUM LIST of the Mechanics and Agricultural Fair Association of Louisiana, for the fourth grand State Fair, commencing April 23d, 1870, and continuing nine days.

Also, a small pamphlet on "BEES" and their management, by W. & H. Goulding, manure manufacturers, Cork and Dublin, Ireland.

Correspondence of the Bee Journal.

NEW CUMBERLAND, W. VA., Jan. 22.—Bees have done very poorly here for the last two years, on account of the drouth. I started two years ago with thirty-three stands, and paid out forty-five dollars for Italian bees and feed, and have not one dollar out of honey in those two years. But I think that next season will prove a good one for bees, as clover never looked better than it does at this time.—WM. GREGORY.

BYRON, MICH., Jan. 24.—I wish success to the BEE JOURNAL. It is just what every bee-keeper wants. I followed the directions given in the BEE JOURNAL on feeding bees, to induce or promote breeding, and my bees have done the best of any in the neighborhood; enough better than others to more than thrice pay the price of the JOURNAL. Bees have not done well here for the last two years. A great many stocks will perish this winter, if not fed.—JOHN MIDDLESWORTH.

EAST TILTON, N. H., Jan. 26.—One year ago last September, I bought my first swarm of bees. At that time I could not tell a worker from a drone, or a drone from a queen, nor drone-comb from worker-comb. But by the information and instruction obtained from your JOURNAL, I not only soon learned readily to detect either, but even handle my bees about as I am a-mind to, to the astonishment of some of the old gum and sulphur-pit men. I have two stocks with Italian queens, (put in late in the fall,) three hybrids, and two black stocks. Three were doubled up from six light stocks.

The past season was an extremely poor one for bees in this vicinity. Not one-fourth of this year's swarms have stored honey enough to winter through; and consequently a great number have been consigned to the sulphur pit. On account of drought, breeding ceased so early that nearly all stocks have gone into winter quarters very light; and the bees that survived must have been aged, so that the prospect of wintering well is rather unfavorable.

Success to the Bee Journal. As long as I undertake to keep bees, I can hardly see how I could get along without it.—J. R. P. Sanborn.

Tuscola, Ill., Jan. 26.—I wish to obtain a little information through the Journal. I have ten stands of bees in old-fashioned box hives, and wish to transfer them into movable comb hives. When is the best time to transfer, before or after swarming? The hives I am making are similar to those of Mr. I. F. Tillinghast, only mine are 18½ inches square inside, and 12½ inches deep. I intend to put my honey-boxes in the end or side, and would ask Mr. Tillinghast how he makes his division-board so that the bees can get to the boxes, and how he makes the entrances to his honey-boxes? Will it do to put the frames broadside to the entrance? Do you have a honey-board on the top of your frames during the summer? The bee fever is at considerable height here.—H. C. Durborow.

Dalton, Ohio, Jan. 24.—I have been a reader of the Bee Journal for a short time, and cannot speak too highly of its merits; but as I am only a beginner in bee-culture, I would say that the readers of this correspondence must not expect anything new. I will only give some of my experience, while at the same time I would like to have some comments on my letter from some of the brethren who have more experience in this line.

My experience is limited to one summer. In the spring of 1869, I bought a colony of common black bees in a common square box. In the latter part of May I formed an artificial colony on a system highly recommended by Mr. Langstroth. Some time in July I bought an Italian queen, and introduced her into the artificial colony, which was doing very well at this time. I saved the common black queen until I was sure that the Italian queen was accepted by the colony. I now formed a second artificial colony from the first stock, giving it the queen I had saved. It did very well. I assured myself that all had queens; after which I took a trip to Tennessee for two weeks. I was pleased with my success thus far; but imagine my surprise when I came home and found my parent stock infested with the bee-moth, so much that I could not save it, as it was in a square box, and I consequently had no control of the combs. I forced out what few bees were left in the second artificial colony, emptied the old square box, broke up and melted the comb with moth and all. Having thus avenged myself, I turned my attention to the two remaining colonies, which seemed to gather a good deal of honey.

Several weeks later, one of my neighbors allowed my Italian colony to rob one of his weak stocks, thus spoiling them; for having robbed his, they made an attack on my colony, and carried away the greater portion of its stores before my discovery. I closed my attacked colony for two or three days; but upon opening it again, the Italians renewed the attack. Its loss, however, was my Italian's gain. I now have one good colony of Italian bees, with which I propose to Italianize some common stocks. I intend to buy some black bees, providing I can Italianize them without going to the expense of buying queens for every colony. It seems to me that I could Italianize half a dozen or more from the one I now have, if I only knew how. Will some one oblige a beginner by informing him seasonably of the best mode of doing it?—J. Rudy Roebuck.

Shell Bluff, Yazoo River, Miss., Jan. 24.—Since January 15th, the bees in this section have been hard at work, carrying large quantities of pollen. I think they gather it principally from the maples, as the tops of those trees seem to be alive with bees. The thermometer stands at 5 p. m. to-day at 73° F., so you see the weather is quite warm. It makes one very sad to see the little fellows going in with their heavy loads, when we know that all their brood must perish, and that they are but shortening their own lives by this extra work. You know that I have foul brood—that terrible scourge, in my apiary; but I hope that through the kindness of friends, I shall be able to send some good news to you, Mr. Editor, before many days. In the meantime, I would say to the readers of the Bee Journal, as we are beginning a new year, let us work hard for the prosperity of this our pet; for who is there of us who does not feel that the Bee Journal is a part of his family? Let every one of us send in at least one new name. This is small, but it will accomplish much for our favorite.—W. H. Morgan.

Wenham, Mass., Feb. 10.—On page 172, in the February number, can be found a communication from Mr. D. T. Batcheldor, of Newburyport, Mass., giving his experience with his first hive of bees. Mr. B. says: "I took them to the county fair, and there obtained the first premium of four dollars. *There were three or four old bee-keepers present, with their experience and new style of hives, and friend Alley with the rest.* All said that their bees did nothing this year, and we must try again, and see who will win." Now the foregoing statement is far from being correct; and any one on reading the article would suppose that "friend Alley" was at the Fair and made the best show that he could in the "bee line." Well, I was present at the County Fair, and had an observing hive with me, merely to show the queen bee, and to do my part towards amusing the people who attended the Fair. My bees were not entered for a premium, nor did I expect one.

Mr. D. C. Batcheldor, of Newburyport, brother of the gentleman named above, had a stock of bees on exhibition, in one of my new style Langstroth hives. Last season (1869) they stored at least forty pounds of honey in small boxes, besides casting off a large swarm that filled its hive with new comb, and stored honey enough to winter. Nor was this all. On the first day of June one of the combs in the brood-box broke down and destroyed more than two quarts of the bees. This hive was exhibited with all the boxes in it, but had the outside case removed so that the boxes could be seen, and all of them (36) had more or less honey in them.

Mr. B. says that he obtained the first premium, of *four* dollars. I do not see how he secured a premium on his bees, when none was offered by the society. The sum of six dollars only was divided between four bee-keepers; and this was only done to partly pay for the trouble of putting the bees into the hall and taking them out again. Of the above-named sum Mr. D. T. Batcheldor received $2; D. C. Batcheldor, $2; Alfred Green, $1; and "friend Alley" $1. Now Mr. B. you must try again before *you* can "win."

I wish to say that I have received several letters to which I could not reply because no name of town or State was given. Two letters received last fall were not answered for the same reason—one from Joseph A. Brown, and the other from a Mr. Crane. Correspondents will please take the hint.—H. Alley.

AMERICAN BEE JOURNAL.

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AT TWO DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

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Fancied Faults of Italian Bees.

Translated for the American Bee Journal.

At the German Bee-keepers' Convention at Nuremberg, in September last, Mr. Kaden, an old apiarian, a time-honored correspondent of the "*Bienenzeitung*," and a warm admirer of the Italian bees, stated that "it must be conceded that these bees have some undesirable qualities. First, among these, is an aptitude to change their queens. He had known a colony to make such changes three times in the course of a single summer, without swarming. Secondly, they manifested a strong propensity to build drone combs. Not only will first swarms build such combs, but even second swarms, and artificial colonies with young queens, will do so. And, thirdly, Italian colonies are usually less populous in the spring, than those of black bees." When asked, if this be so, why he still cultivated the Italian bees, he said, first because of their beauty and gentleness—qualities always overpoweringly attractive, for above all things he dreads the want of gentleness in bees, as well as ladies! Secondly, for the means afforded by them, of producing hybrid stock, which, for productiveness, he preferred to the pure breeds, whether honey or wax was the object.

In reply, Dzierzon said, "Undoubtedly there is nothing perfect beneath the sun, and the Italian bee too may have some qualities not exactly desirable. Nevertheless, I regard it as the best of the known varieties, and apprehend the last speaker must have looked through glasses somewhat discolored, to have seen so many serious objections. First, he complains of frequent change of queens. This may be so under peculiar circumstances, and from various causes, to one of which I will here advert. When a queen is introduced into a colony, we cannot always be sure of what takes place. She may receive some injury not immediately fatal, but sooner or later resulting in her death, and thus necessarily producing a change. But I can give the assurance that, in the course of last summer, in all my colonies not a single queen was superseded, and not one perished; though in former years this has sometimes happened. It may be true also that Italian queens do not attain to the age which black queens ordinarily reach; but this springs from their superior fertility. They lay the same number of eggs as others, but in a much shorter period; which I regard as a decided advantage.

It is also objected that the Italian bees do not suit a district with early spring pasturage, the colonies being then comparatively weak. An advantage rather, I conceive. The Italians cease brooding earlier in the fall, and apply their extraordinary industry to the accumulation of stores while pasturage is diminishing; and thus, though less populous, are well supplied for the winter. Whereas the black bees, occupied with nursing their brood, gather comparatively little, and, with many bees, may be in want before spring. The Italians, in their zeal for honey-gathering, may indeed venture out in unpropitious weather in the fall, and many may thus be lost; but it is this trait precisely that enables them to produce such extraordinary results when pasturage abounds and the weather is favorable.

Again, the Italian bees are charged with a propensity to build drone combs. Now, I have set up for trial pure colonies of both kinds, and the issue was just the reverse of this. I have found no such propensity among the Italians, and have had to insert drone combs in their hives, when a supply of drones became desirable; because the bees in those colonies did not, of their own accord, build such combs.

I am thus constrained to differ from the last speaker, in these particulars, and must continue to regard the Italian bee as superior to any other of the known varieties, and the best of the cultivated breed."

Mr. Fütterer next remarked, "It is urged against the Italian bees that they change their queens frequently. Judging from my own experience, I must doubt this. I have cultivated these bees about twelve years, and have had no reason to complain of such changes. They may have occurred to others, and I will endeavor to show, briefly how they may be accounted for. An enthusiastic bee keeper buys a fine large yellow queen—a prime article—and introduces her in one of his colonies. Every few days he is visited by some brother bee-keeper, to whom of course the splendid stranger must be shown. The hive is opened, the workers more or less irritated, and the beautiful queen exhibited and then returned to her domicile. The bees are aroused and in angry commotion on each occasion; but the hive is finally closed, and the owner walks off satisfied and *gratified*, ready to repeat the exhibition day after day, to please admiring friends. Ultimately however, amid all this disregarded humming and bustle, her majesty is attacked, enclosed by the workers, and killed! Now who is at fault? Obviously the bee-keeper himself! Italian queens are not more liable to be attacked and killed, than others.

As regards the objection that the Italians are inordinately prone to build drone combs, I agree with Dzierzon that it is unfounded, for my experience coincides with his. If an Italian colony is properly managed, the workers will not build more drone comb, than black bees will in like circumstances. By improper management, doubtless, undesirable qualities may be developed in those bees, as in others; but what some may regard as an objection, others will perhaps consider an advantage. Thus, for instance, with me it is desirable that my bees should secure large stores of honey in the fall, and many Italian workers may be lost in their late excursions. The result is that I have less populous hives in the fall than my neighbor, who has only black bees, in populous hives, with much less honey. I have not so many bees to carry through the winter; and when the swarming season arrives, my colonies are quite as strong as his, the superior fertility of the Italian queens having speedily replenished the hives."

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[For the American Bee Journal.]

The Italian Bees Again.

I have received three communications or inquiries, and all three of about this purport—"Mr. Gallup, I wish your candid opinion of the Italian bees. I have tried them, and do not find them to come up to the recommendation. In fact they have not done near as well as my black bees," &c.

Now these correspondents are no doubt perfectly honest in their conclusions; but they have been deceived. Two seasons ago I procured three queens from a certain party, who advertised cheap queens, and my neighbor, Mr. Wright, obtained three from the same party. My three queens would not breed as fast as one ordinary prolific queen; in fact they could not breed fast enough to keep up the strength of the stocks, leaving increase or profit out of view. Neither could I or did I succeed in raising prolific queens from them. Mr. Wright's turned out worse than mine. To use his own language, they did not pay the transportation; they ruined the stocks they were introduced to. A Mr. Johnson and Mr. Drake, of Brownsville, in this county, procured queens from a certain party in M———. They were warranted pure, but, allowing me to be a judge of their purity (and I saw them), they were a recross from a cross; and it was hard to tell whether they were any better than the blacks. But of one thing we were sure, they were as cross as vengeance! Then there was another party at Dacotah in this State, who scattered pure Italians broad-cast; and I saw several of those stocks in different parts of the State. The owners of them informed me that they could not discover that they were any better than black bees. Now, for a description. They were a mere shade lighter than common blacks, and a few in each swarm showed a slight stripe. The owners purchased them for pure Italians, and not knowing to the contrary, judged from them that the Italians are a humbug.

In the first place, a queen breeder that intends to keep up his reputation should breed from none but stock of undoubted purity. He should breed from prolific queens, and avoid breeding in and in as much as possible. As Mr. Benedict says, we can breed stripes on to our bees (and I do not in the least doubt this), so we can by careful breeding raise our stock up to produce prolific queens.

To the person who is unacquainted with the Italians, I would say, procure your first queen from some old experienced breeder, one who has already established a reputation; for *it is in the end cheaper to pay even twenty dollars for a queen, and be sure that she is a good one in every respect, than to obtain a poor one as a present.*

If I had known nothing about Italian bees, and formed an opinion of them from the queens obtained by Mr. Wright and myself, I should in all probability have condemned them.

You will see in the BEE JOURNAL, an account of my experience with the Italians the past season, as also with the blacks, and the cross breeds; and the Italians have demonstrated their superiority beyond a possible chance of mistake.

E. GALLUP.

Orchard, Iowa.

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[For the American Bee Journal.]

Italians *versus* Black Bees.

It is ten years since the Italian bee was first imported. The question was then asked—"Is it any better than the black bee, or is it a humbug? a mere scheme for money making!" And strange to say, notwithstanding that variety is so widely disseminated, the same question is still asked by many anxious inquirers. Skilful apiarians, men who have given both kinds a chance to be judged of by their fruits, have I believe to a man given the preference to the Italians. But the more witnesses the better, and hence I wish to add my experience.

I am frequently in receipt of letters asking how I like the Italians, and whether I find them superior to black bees; and without doubt other apiarians are besieged with similar inquiries. Courtesy requires that such letters be answered, no matter what the hurry of business; and an ordinary letter can cover but a small amount of the ground necessary to be gone over to tell why our preference is so much for the Italians. Allow me, Mr. Editor, to answer, so far as I am concerned, many of these letters at once, through the medium of your excellent Journal, that in future it will only be necessary to say to such inquirers—"*See* AMERICAN BEE JOURNAL for *April*, 1870."

Experience alone can demonstrate the truthfulness of theory, and I am free to give mine if any one will be benefited or instructed thereby. Concluding that twenty (20) years' experience with bees, and reading everything I could obtain on the subject, had qualified me to manage them, I purchased two Italian queens and began the work of Italianizing in the summer of 1866. In the spring of 1867, I had thirteen colonies of Italian and forty-seven of black bees. Now for the result. From one of my Italian colonies, I obtained three swarms (that wintered) and eighty pounds of honey; about fifty pounds of this was stored by the first young swarm, and the balance (thirty pounds) by the stock, after casting the three swarms. Other of the Italian stocks did nearly as well. The poorest one gave me two swarms and twenty pounds surplus. The *best* stock among my forty-seven black colonies, gave me one swarm and thirty pounds of surplus; and I had about a dozen stocks that gave me no swarms nor an ounce of honey. One second swarm of Italians filled its hive and gave me twenty pounds of surplus, while not even a first swarm among the blacks stored a pound of surplus.

I closed the season with one hundred and twenty colonies, all Italians, which I wintered without loss. The following May and the first half of June proved wet and cold, and very little honey was secreted in the few flowers that did bloom. The store of honey became exhausted, and many of my colonies were on the verge of starvation; and here a point of excellence in the Italians presented itself, which I did not expect. For a number of years I had been more annoyed by my bees *deserting* their hives in the spring, when their stores of honey became low, than from all other causes combined. The depredations of the wax moth and loss of queens sunk into insignificance in comparison with this voluntary desertion of the hives, by colonies, and this sometimes while several pounds of honey yet remained. Apparently nothing but the *fear* of want caused them to sally out and try to obtain entrance in other colonies, which, if they succeeded in doing, they were sure to be slaughtered to the last bee. But when I succeeded in preventing entrance to other colonies, and returned them to their own hive, the only sure way of making them *stay*, was to deprive them of their queen for a week or two at least, in which situation they would construct royal cells, and the mania for deserting their combs would pass away. Then liberal feeding, if the flowers had not begun to yield honey, would set matters right; and by fall such stocks would be in good condition, but have yielded no profit. But I have observed that the Italians "stick to the castle;" and I have never had any Italian colony offer to desert its home, though I have tested them severely on this point. I cannot account for this difference, unless it be their superior attachment to their brood, or a consciousness that if the flowers opened while life remains, they are abundantly able to supply all their wants. I do not know whether the experience of others is similar to mine, in this particular, or not, as I do not remember to have seen a reference to it from any of your numerous and able correspondents.

But Mr. A——, a man of limited experience with bees, and with *very* limited force in *any* enterprise, "has tried the Italians and does not like them," thinks they "aint quite so good as blacks." Now such men do not take the Bee Journal, and it would be useless for me to give my opinion of them as mighty poor bee-men, for they would not "see themselves as others see them." But there are other men who believe that what is worth doing at all is worth doing *well*, and if the honey bee will pay for cultivating, that is the best kind which *pays the best*—the ultimate object being to obtain honey of the best quality for the table or for market.

The difference of conclusion arrived at by different men, to my mind, springs from the different degrees of fertility of the first queens obtained. Every apiarian is aware of the fact that there is a great difference in the fertility of the queens in his own apiary. Some are marvels of productiveness, while others deserve no better fate than to have their heads pinched off at sight. The queen is the mainspring of the colony, and the more productive she is, the more energy will the workers display in bringing in pollen and honey. The two queens I first purchased were introduced to colonies of black bees. One proved to be wonderfully productive, while the other was worthless and was superseded before fall. Had I possessed only the queen last referred to, I should have formed a very poor opinion of the Italians. And just here a remark of the lamented Varro comes to mind, viz., that "if queen breeders would sell fewer queens, and at a higher price, and know themselves the *quality* of the stock, it would be much better for the purchaser."

Lest this article become too long to be acceptable, I will close by saying, from the experience of the last four years, I prefer the Italians to black bees, and consider them superior in *every* respect. W. J. Davis.

Youngsville, Pa., March 3, 1870.

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[For the American Bee Journal.]

Chloroforming Bees.

It appears from an extract from the *Southern Cultivator*, which appeared in the last January number of the Bee Journal, that Dr. A. Love killed his bees by quieting them with chloroform. What else could be expected from a doctor? Killing belongs to the trade! They frequently give an *overdose*. Chloroform may be safely used in proper quantity for quieting bees. As an agent for introducing queens I have found it very effectual. The quantity used should never exceed one-fourth of an ounce, and even that quantity may be found too large if the hive is tight and all the fumes are retained in the hive among the bees. It is not best to give so much as to make the bees fall down out of the combs, because if so, many of them would get a doctor's dose. Not dead drunk, but simply drunk, is all they require. J. H. Thomas.

Brooklin, Ontario.

* * *

Second swarms usually issue nine days after the first, although they have been known to issue as early as third and as late as the seventeenth, but such cases are very rare.—*Langstroth.*

[For the American Bee Journal.]

Yellow Bands.

On page 141, are two columns of questions, queries, and answers. Lina, Baroness of Berlepsch, says—"The Italian bee bred in Italy has generally but two yellow bands, and, including the narrow strip next the thorax, three. But Dzierzon has raised a much more beautiful race. The workers of his full-blooded bees have three yellow bands, exclusive of the narrow strip."

In the next column, Querist asks—"Are three yellow bands a proper test?" Mr. Nesbit answers —"That is considered a test by the best apiarians both in America and in Europe." This answer is hardly satisfactory, because it involves still another test. We want to know *what* constitutes the *best?* I have asked this question before. We want this as a test for them, that we may know whom to follow.

Dzierzon's "full-blooded bees have three bands exclusive of the narrow strip." But in Italy, where these very bees were obtained, they have but two; and now, after he has succeeded in breeding, through several generations, a lighter color than the original, should he advertise that four bands were the *only* test of purity, and considered so "by the best apiarians," and the pure are in his hands and you must come to him for them, it would be as consistent as very many of our folks are. When we find who "the best apiarians" are, we will inquire of them if it is possible for any of those of our imported queens that *come from a district where no black bees are known*, are pure, although they show less than four bands? or if those that Mr. Grimm imported and described are so?

It is possible that very light bees may be pure; but I dislike the idea of denying parentage because of a change. Possibly this very change in color —call it improvement—may prove a degeneracy in vigor. We can trace great changes in the vegetable kingdom. In the rose, dahlia, and hundreds of other flowers, the five petals, by means of the stamens, are multiplied to hundreds, increasing the beauty, but at the expense of the seeds. I hope that as we increase the beauty of our queens by pale golden tints, we shall not, in the same ratio, decrease their fertility.

Gravenhorst, who has sent very many of our queens to us, says, "We have paid much less regard to color than to other qualities, such as activity, industry, prolificness, disposition, &c."

Although purity is so easily proved by the "best apiarists," can it be as easily shown that these very pure ones of *fourth* proof show any better results, store more honey, increase faster, behave better, defend themselves with more vigor, or on the whole possess more desirable qualities? Let us look to this.

M. QUINBY.

St. Johnsville, N. Y.

It is a wise arrangement that the second swarm does not ordinarily issue until all the eggs left by the first queen are hatched, and the young mostly sealed over, so as to require no further feeding. Its departure earlier than this, would leave too few laborers to attend to the wants of the young bees. —*Langstroth.*

[For the American Bee Journal.]

The Indian Bees.

MR. EDITOR:—The article in the JOURNAL for November, on the "Ferocity of the Indian Bees," is not calculated to inspire one with a longing desire to obtain them. One statement, however, gives me some hope that they may be domesticated, viz.: "the nests in the church steeple." This is a favorite resort with our black bees, and probably with the Italian, and leads me to hope that they have other habits in common. It may be that the *apis dorsata* in India is more dangerous than those in the islands of the Malay archipelago. The following, taken from the "*Malay Archipelago*," by Alfred Russell Wallace, will doubtless interest many of your subscribers:

Of the products and exports of the island of Timor, he states: "Besides ponies, almost the only exports of Timor are sandal wood and beeswax. The sandal wood (*santalum alb*) is the produce of a small tree, which grows sparingly in the mountains of Timor and many of the other islands of the far East. * * * The beeswax is a still more important and valuable product, formed by the wild bees, (*Apis dorsata*,) which build huge honey combs, suspended in the open air from the under side of the lofty branches of the highest trees. These are of a semicircular form, and often three or four feet in diameter.

"I once saw the natives take a bees' nest, and a very interesting sight it was. In the valley where I used to collect insects, I one day saw three or four Timorese men and boys under a high tree, and looking up, saw on a very lofty horizontal branch three large bees' combs. The tree was straight and smooth-barked, without a branch till at seventy or eighty feet from the ground it gave out the limb which the bees had chosen for their home. As the men were evidently looking after the bees, I waited to watch their operations. One of them first produced a long piece of wood, apparently the stem of a small tree or creeper, which he had brought with him, and began splitting it through in several directions, which showed that it was tough and stringy. He then wrapped it in palm leaves, which were secured by twisting a slender creeper round them. He then fastened his cloth tightly round his loins; and, producing another cloth, wrapped it round his head, neck, and body, and tied it firmly round his neck, leaving his face, arms, and legs completely bare. Slung from his girdle he carried a long thin coil of cord; and while he had been making these preparations, one of his companions had cut a strong creeper or bush-rope eight or ten yards long, to one end of which the wood-torch was fastened and lighted at the bottom, emitting a steady stream of smoke. Just above the torch a chopping-knife was fastened by a short cord.

"The bee-hunter now took hold of the bush-rope just above the torch, and passed the other end round the trunk of the tree, holding one end in each hand. Jerking it up the tree a little above his head, he set his foot against the trunk, and leaning back, began walking up it. It was wonderful to see the skill with which he took advantage of the slightest irregularities of the bark or obliquity of the stem to aid his ascent, jerking the stiff creeper a few feet higher when he found he had a firm hold for his bare feet. It almost made me giddy to look at him as he rapidly got up—thirty—forty—fifty feet above the ground; and I kept wondering how he could possibly mount the next few feet of straight, smooth trunk. Still, however, he kept on, with as much coolness and apparent certainty as if he were going up a ladder, till he got within ten or fifteen feet of the bees. Then he stopped a moment, and took care to swing the torch (which hung just at his feet) a little towards those dangerous insects, so as to send up the stream of smoke between him and them. Still going on, in a minute more he brought himself under the limb; and, in a manner quite unintelligible to me, seeing that both hands were occupied in supporting himself by the creeper, managed to get upon it.

"By this time the bees began to be alarmed, and formed a dense buzzing swarm just over him; but he brought the torch up closer to him, and coolly brushed away those that settled on his arms or legs. Then stretching himself along the limb, he crept towards the nearest comb and swung the torch just under it. The moment the smoke touched it, its color changed in a most curious manner from black to white, the myriads of bees that had covered it flying off and forming a dense cloud above and around. The man lay at full length along the limb, and brushed off the remaining bees with his hand; and then, drawing his knife, cut off the comb at one slice close to the tree, and attaching the thin cord to it, let it down to his companions below. He was all this time enveloped in a crowd of angry bees, and how he bore their stings so coolly and went on with his work at that giddy height so deliberately was more than I could understand. The bees were not evidently stupefied by the smoke or driven away far by it, and it was impossible that the small stream from the torch could protect his whole body when at work. There were three other combs on the same tree, and all were successfully taken, and furnished the whole party with a luscious feast of honey and young bees, as well as a valuable lot of wax.

"After two of the combs had been let down, the bees became rather more numerous below, flying about wildly and stinging viciously. Several got about me, and I was soon stung, and had to run away, beating them off with my net and capturing them for specimens. Several of them followed me for at least half a mile, getting into my hair and persecuting me most pertinaciously, so that I was more astonished than ever at the immunity of the natives. I am inclined to think that slow and deliberate motion, and no attempt to escape, are perhaps the best safeguards. A bee settling on a passive native probably behaves as it would on a tree or other inanimate substance, which it does not attempt to sting. Still they must often suffer, but they are used to the pain and learn to bear it impassively, as without doing so no man could be a bee-hunter."

Beeswax is given as one of the chief exports of several of the islands of the Malay archipelago, and I believe it is all produced by the *apis dorsata.* His Excellency Joseph William Torrey, President of the American Trading Company of Borneo, says he never was in a land that so abounded in bees.

Both the black and the Italian bee have been introduced in Australia. I think the *apis dorsata* does not exist there. I have corresponded with several persons, hoping to get specimens and information; but have not as yet met with much success. Now that the journey is shortened by the opening of the Suez canal, and our relations with the East rendered more intimate, we may soon hope to obtain the *apis fasciata* and the *apis dorsata* direct. Had we a few practical apiarists at different points, no desire need go long unfulfilled; but owing to the absence of the right man in the right place, it is now more difficult to import a bee than an elephant. We look to our Bee Journals, now published in several languages, to spread the much-needed information on the art of packing and transporting bees for long voyages, that our studies and experiments may be extended to every bee that the varieties of climate of our vast country can sustain.

EHRICK PARMLY.

New York.

[For the American Bee Journal.]

From my Bottle of All Sorts.

A certain doctor kept a bottle into which he put all the "odds and ends of all the various compounds prepared for different diseases." This he called his "bottle of all sorts," and when called to attend a patient whose case he did not fully understand, he would order a dose from this bottle, which, he said, was "sure to hit the case every time." Not knowing what would most interest my brother bee-keepers, I have concluded, like the doctor, to give them a dose from my bottle of all sorts, hoping I may "hit" somebody's case.

THE TRIANGULAR COMB GUIDE.

It is to be regretted that there are many men among American bee-keepers who will stoop to so base and dastardly an act as to collect from timid bee-keepers money for the use of the "triangular comb guide," when it appears they have no right to such patent or claim. Two or three years ago, when I was at the Michigan State Fair, exhibiting my hive, K. P. Kidder suddenly appeared and commenced to hold forth close beside me. At that time I was not personally acquainted with him, but had frequently heard of the celebrated H. B. Man—honey bee man, as he at one time styled himself. A gentleman standing by informed me that the person blowing his trumpet so fearfully was no other than K. P. Kidder, and said he, "Kidder claims that you have no right to use the triangular comb guides." I replied, I will see to that. Shortly after, Mr. Kidder came to me and told me the same. After a few words had passed between us, I told Mr. Kidder, if he had four or five thousand dollars to spend in testing the thing, he had better pitch in at once, for I was prepared to try it on. Such a bold front was more than he had bargained for, and in a very short time after, he was holding forth in another part of the ground, as tame as a kitten.

I understand that in St. Lawrence county, in the State of New York, ten dollars has been demanded of those using the triangular guide, and prosecution threatened if they refused to pay it. Some paid; others refused; but the threat has not been carried out. They are now operating in Michigan, and I am informed many timid bee-keepers are paying their ten dollars; and now this sham suit, an account of which appears in the Journal, will, as the Editor very correctly remarks, tend to frighten timid or ignorant parties into paying for the use of the "guide." I believe it to be the duty of every honest bee-keeper, to expose this nefarious system of obtaining money.

Honey Extractor.

I would not have one of the many that have been described in the Bee Journal. Why? Because I am just so vain as to think that I have a better. "And you want to advertise it," says one. No, I do not; but will tell you how it is made. It would not pay you to buy of me under the present tariff; besides, you may not like it as well as your own. It is made of zinc. Tin will eventually rust; zinc will not, and is in no way affected by the honey. For my frames, it requires to be about twenty-two inches deep and twenty inches in diameter. There is a rim around the bottom, to keep the bottom up from the floor. The bottom is strengthened by cutting a board, six inches wide and just long enough to crowd into the rim, and is fastened there. It holds the bottom of the tub from sinking in the middle. Now for the advantage over all others. I make it with a tight cover or top, which keeps out all flies, bees, hornets, or any other sweet-toothed insect, and allows you to use it in your apiary or anywhere else you choose, leaving the honey remain in it until you wish to empty it. The frame that holds the combs may be turned with a crank on the top of it, or with gearing. I use the latter. The bearing on which the frame work runs, is a tin or zinc cone, say two and a half inches in diameter at the base, and running to a point at the required height. The cone is soldered to the bottom of the tub. One-half of the cover takes out, to allow the combs to be put in. One-third of the other half is made fast to the tub, and the other two-thirds hung to that, with hinges, which allow it to open, so that the frame work can be removed. When not in use for extracting honey, this tub makes one of the best boxes known for the good wife to keep her bread and cakes in.

Gallup's Observations and Experiments, which I have just been reading, are quite interesting. But I am led to inquire, are we drifting out into an open sea of difficulties? It must be so. And the worst of it is that Gallup, having made known to us our position, never attempts to help us out of it. First he says—"Sealed brood introduced into a strong stock fed just sufficient to keep the bees alive, would perish and become putrid in three days." What reason does friend Gallup give for that? Again—"eggs would not hatch in such colonies, until the bees commenced to gather honey, or until they were fed more plentifully." Does friend Gallup wish us to understand that bees' eggs are so very wise that they refuse to hatch, and be starved to death? Come, now, lend a hand to the wheel, and pilot us out of this difficulty. Why did the eggs of one of your queens refuse to hatch? Others have met with such instances. Who will explain it? And what about those "four partially fertilized queens? I think they were something like my little brother's cow, which he was driving home one day, when a neighbor met him and inquired if the cow was farrow? Not understanding what was meant by the term, he answered—"little farrow, not much farrow though." How will friend Gallup account for partial impregnation? Is the theory exploded that "queens mate only once?" I know that lately it is claimed that queens have been known to mate two or three times; yet the old theory had a "loophole," and it could still be said that though they mated more than once, they were only fertilized once. But if Gallup's queens were a little fertilized, probably, had they mated again they would have been wholly fertilized. Then what of the theory? Now a certain writer in Iowa claims that when the young queen returns from the bridal tour, with the organ of the drone attached, the workers will sometimes immediately remove or pull it away. In which case the queen must mate again in order to become fertilized. He also claims that he has removed it himself three or four times, in one season, from the same queen, thereby preventing impregnation. Now, if it is absolutely necessary for the organ of the drone to remain for a certain length of time, in order that the queen shall become impregnated, it is quite easy to understand that if the bees remove this too soon, the queen will be only partially fertilized. Hence, if all written is true, some of us are in a fog. Can friend Gallup dispel it?

Frame Hives.

In the war of hives there is one question that is nearly settled. It is generally, if not altogether, admitted that frame hives are best. But which among the legion of frame hives that are offered to the public is best, is yet a question. Every maker and vender is crying up his own wares as best; and if somebody "spoils his horn," he gets a friend to blow for him. There are likely to be at least as many opinions as there are different hives. My own opinion is that not one in fifty has added any real improvement to the Langstroth patent. Yet do not understand me to say that it has not been improved; for I believe, and if I spoke as I feel, I should say I *know* it has. Aside from the shallowness of the original form, it has, in my opinion, three, yes four objections. First, it has a permanent bottom bound, and in order to clean out the hive properly in the spring, it is necessary to remove the frames. Yet almost every attempt to make a movable bottom board and have it attached to the hive, has been a bungling failure. Still such has been accomplished, and is therefore an improvement. Second, it is inconvenient in moving and taking out frames filled with honey. This difficulty has also been overcome. Third, the frames are too long, from front to rear. The combs in such a hive are more waiving, and are more likely to be built crooked. This, however, may be greatly overcome by raising the rear of the hive, which has the same or nearly the same effect as shortening the frames; yet it is inconvenient to do so. No frame should be over thirteen inches long, inside measurement. I mean that portion of the top bar to which the comb is attached. Fourth, the frames are not adjusted at equal distances apart. Many will laugh at the idea that this is an objection. Well, laugh, and enjoy your opinion; but having tried both, I prefer frames properly adjusted at equal distances apart.

J. H. Thomas.

Brooklin, Ontario.

[For the American Bee Journal.]

Bee-culture and Artificial Swarming.

Mr. Editor:—I came very near losing patience in not getting my invaluable assistant in due time—I mean the Bee Journal. There is nothing now of this world's goods that I value so much as the Journal, except it be the better half and the little ones. I am in receipt of it yesterday, and find in it as usual, many valuable things; and what pleases me above all is that it is likely to live, and is fighting its way bravely for existence. May it prosper, and continue to find "troops of friends," which it is evidently gaining every day. I expect pretty soon to win a number of subscribers for it. But as matters stand here in my neighborhood with regard to bee-culture, it is in rather a rude state yet; though for one I am bound to maky efforts for improvement in the management of this important pursuit, in accordance with scientific principles. I am therefore a warm-hearted supporter of the Journal, and am indeed very sorry that I was not made aware of its existence before this current volume began. I am sincerely thankful to Mr. J. H. Thomas, of Brooklin, Canada, for telling me of it, when corresponding with him. Of course I am only a beginner in the business, last season being my second. That being an unfavorable one, I did not make any very great progress in increasing my stock; but if all is well, I intend doing something in the coming season.

I have read of many different plans of making artificial swarms, and have practised several methods, none of which please me exactly, though I was successful in every instance. I have thought of a new plan, at least with me it is new, and may be so with a great many more of the readers of the Journal. I will therefore make it public through that medium, and hope sincerely that some of your more experienced friends will give us their opinion whether it is likely to work or not. If it will work in that way or with some slight modification, it will suit me first rate. I contemplate trying it next summer, but desire previously to obtain the judgment of others. The process I propose is as follows: Get a hive arranged with combs, and remove a strong stock to a new stand, some distance from its former location, place the hive with the arranged combs on the stand of the stock thus removed. The bees that range in the field will fly to their accustomed stand. Finding their queen gone, and having no means left to rear another, they will according to *bee-ology*, gladly accept any queen offered to them. But, after a considerable number of bees have collected, I should give them the queen caged, and liberate her after twenty-four hours. Whether it would answer to give them a virgin queen, is what interests me most; as I fear that when the queen takes her excursion trip, the bees may not yet have become fully reconciled to the new state of things, and hence accompany the queen never to return. If this plan can be made to work, it would be a great advantage, as the old stock would not be disturbed, and about every ten days a new colony could be formed. Where increase of stock is the object, as it is with me, it will be necessary to provide combs to fill the hives for the new stocks to be formed, in making colonies in this manner. Will not friend Gallup, or some of those possessed like him of much experience, report their views of the above suggestion? With best wishes, Mr. Editor, for you and the Bee Journal, and wishing the latter came four times a month, I am yours, as ever.

C. Wurster.

Kleinsburg, Canada.

[For the American Bee Journal.]

Does Bee-keeping Pay?

If you are in doubt upon that point, I suggest that you turn over the leaves of my record for 1869. It is the record of one much more truly a "novice" in these matters, than the experienced and enthusiastic correspondent who wears that name in the columns of the Bee Journal.

My stock in trade for the spring of 1869, consisted of two old box hives almost destitute of honey, with few bees in each; about fifty frames of empty combs from Langstroth hives; and any required amount of interest in the subject. I began feeding syrup in March, using the inverted can with perforated screw top; fed plentifully till flowers came, using for each hive 5 lbs. 8 oz. of coffee sugar. Between June 11th and 28th, each of these stocks threw off four good swarms, which were duly cared for in Langstroth hives, with a fair allowance of empty comb as a start in housekeeping. From the two prime swarms I removed the honey boards a few days after hiving, placing one set of surplus boxes directly on the frames. July 8th, I hived a large swarm that came to me. Instead of two, there were now eleven stocks. The wet weather kept up a constant succession of clover blossoms; pastures and commons were white and sweet until late in September. But, "into each life some rain must fall," and just here came in my reverses. Not looking for any further increase of stocks, I left home for a few weeks. During my absence one prime swarm threw off a large colony (Aug. 13), which not being properly cared for, deserted soon after hiving. On my return I found a third swarm infested by worms, and broke it up. (N. B.—I plead guilty to carelessness in the use of old comb.) August 25, the same hive that had distinguished itself twelve days before, sent out a fair second swarm, which was secured, receiving the last of the old combs, and a full frame of brood and honey from the parent stock. That was the end of swarming.

I took something over 250 lbs. of surplus honey. 100 lbs came from the top of one prime swarm. Enough of this was sold at thirty cents per pound, to amount to fifty dollars. My eleven hives were all heavy, ready with some protection for out of door wintering.

Does bee-keeping pay? Have I answered the question? This result was obtained in an old fashioned way. Given, a season equally favorable, with all the "modern improvements,"—Italian bees, a "melextractor," &c., &c.,—and what might not be expected?

But my record fails to show what constituted really the largest share of the summer's profits. I did not know how to put it in figures. The still bright hours when, with shawl spread upon the grass, I was at home among my bees—those "singing masons building roofs of gold"—loving them just as much when they paid friendly visits to my wrapper, my hands, or my hair, as when they kept at a greater distance;—the health which came with those hours—the delight afforded by a most fascinating branch of natural history—the new ideas, whose value the future must determine—all this is beyond the reach of arithmetic.

Success to the Journal, and may it number more and more women among its subscribers and constant readers !* C. S. ROGERS.

Elmwood, Ill.

* Aye, and allow us to add *correspondents* to the enumeration, for they always succeed admirably both as writers and apiarians. *Ecce supra!* —ED.

[For the American Bee Journal.]

Robbing Checked Promptly.

"The first frame resists. I guess the bees "have fastened it to the side of the hive. It will "break, if you pull. Slip in the knife to loosen it." But young Frenchmen are presumptuous (perhaps young Americans are not less so). After having attended to the apiary in August, while I was confined to bed with sickness, my son Camille was, in his own opinion, already sufficiently advanced in bee-culture to dispense with the advice of his father. The frame was accordingly pulled out by force, leaving one quarter of the comb smashed in the hive, and another quarter down on the bottom inside.

This was about the last of September. For two weeks previous we had nearly every day emptied some combs by the melextractor, from one hundred full hives, and re-inserted them when emptied. The carrying to and fro of the honey had already aroused the robbing impulse of our bees; and before we could procure plates on which to place the smashed comb, we were surrounded by a host of eager bees, ready for a foray. With a spade I hastened to remove the ground wetted by the dripping honey, upon which the bees soon gathered. Then after directing my son to contract the entrance of the hive on which we were operating, so that only one bee could pass at a time, we left the scene, as we were notified that dinner was on the table.

When my son again left the dining-room, I directed him to look after the exposed hive, for I was far from feeling easy about it. He soon returned in great haste, saying—"the ruchee is robbed. The Italians enter it by thousands. The imbecile black bees do not know how to defend their hive." I inquired—"did you close the entrance so as to let only one bee enter at a time?" "No," replied he, "as the colony was very strong in numbers, I did not contract the entrance so much, only four or five bees could pass at a time, but the robbers have pushed away the blocks."

After putting on our bee hats, we hastily repaired to the spot. The humming of the bees was as loud as that commonly made by a large swarm, when issuing and on the wing. The robbed bees no longer made resistance. I began by contracting the entrances of the neighboring hives. Then I stationed my son in front of the one attacked, directing him to brush away with a feather duster (a leafy twig answers as well) all the bees seeking to enter, and let pass all those coming out. Meantime I procured two pieces of plank or blocks, about six inches square. I placed one of these on each side of the entrance, bringing two corners together so as to enclose a triangular space or yard in front of the entrance, and covered this yard with a piece of wire-cloth having $\frac{1}{8}$ inch meshes—taking care to adjust it so close that not a bee could enter the yard from the outside.—The robbers soon clustered on the wire-cloth, seeking for entrance, while some presented themselves under it, striving to get out. In eight or ten minutes, I suddenly pulled away the blocks and wire-cloth, instantly brushing away anew all the bees, till I was sure that no robbers remained; and then replacing the blocks and wire-cloth as before.

The hive remained thus shut up an hour or two. By that time most of the robbers, tired of fruitlessly seeking an entrance, had returned to their ordinary labor. The corners of the two blocks were then separated so much as to allow one or two bees only to pass at a time. The inmates of the hive soon became accustomed to the entrance, while the robbers vainly endeavored to gain admittance through the meshes of the wire-cloth. If a few succeeded occasionally in finding the new entrance, they were immediately seized by the guards and summarily ejected.

After sundown, in order to let in the few bees belonging to the hive, which had not yet found the new entrance, I removed the wire-cloth, and replaced it early next morning. As soon as I thought that simply contracting the entrance of the hive would secure the colony from further attacks, I removed all my devices.

This mode of checking robbery will always prove successful, if the *ruchee* has a queen or the means of raising one, provided all the robbers are got out of the hive before the bees pertaining to it are confined. C. DADANT.

Hamilton, Ills.

Young queens, whose ovaries are not burdened with eggs, are much quicker on the wing than old ones, and frequently fly much farther from the parent stock before they alight.—*Langstroth.*

[For the American Bee Journal.]

Foul Brood.

I do not "entirely concur with Mr. Alley in advising the immediate and complete destruction by fire of hives and combs, whenever a colony is found infected with foul brood." See *Bee Journal*, vol. 5, page 151. I claim to be posted in this matter, and have been advising beginners in bee-keeping for years. And when I speak from my own experience, I think I know what I am saying. Now, when those who confess to never having had a case of it, but depend on description for all they know, and then recommend a course directly opposite, I do not feel flattered. It would seem that they had no confidence in what I had said, or are ignorant of it. It is evident that Mr. Alley never read the "remedies attempted" on page 212 of "Mysteries of Bee-keeping," or if he had, had no confidence. It might have saved him the trouble of going over the same ground, where I had been twenty years before. Except in the fall, I see no economy in destroying a good colony of bees.

When Mr. Alley first "detected a peculiar smell, such as had never come in contact with my [his] olfactory nerves before, and at once pronounced the two hives infected with the disease," although he might have been correct in his diagnosis, was it proper to jump at conclusions in this way? It was his first case, and important. He presumes, on the evidence of one sense alone, that he is right. This way of deciding before the evidence is all in, is a dangerous one. Again, he says—"I know of but one way to cure this disease, and I strongly advise others who are troubled with this malady, to adopt my remedy."

Probably he knows of but one "remedy," he speaks of but one other. The presumption of having tried all, is objectionable. It was early in the month of June, and the bees were let to work, to see what would be done. The bees lived till the next spring. Then he commenced experiment by pruning, twice repeating what I had done, and failed just as effectually. Had he, when he first decided they were diseased (they were then strong and lived another year), simply transferred his bees to new clean hives, he would just as effectually have got rid of the disease, and had two colonies worth more than those he purchased, besides the chance of surplus. It would have reached long ways towards the $200 lost in experiment.

Of what avail to "study the disease," unless to profit by it? I have been through here, and found a remedy without so great a sacrifice. A colony badly diseased in the fall, is not in good condition for winter. The dead larvæ occupy the cells needed for the mature bees in severe weather, to keep up warmth. Such colonies at this season might as well be destroyed. To winter them they would require stores and combs, which are not often at hand. The outside combs, and those in the corners, often contain good honey for the table, but not for the bees. The centre combs will have some honey cells mixed with cells of dead brood. I see no way to separate such, and of course it would have to be rejected, and should be buried out of the reach of the bees at once. If the hive was sufficiently valuable to pay trouble, it might be cleansed with scalding water, or exposed to the weather six months of our winter, and be perfectly healthy for the bees another year. I would not advise putting bees from such a colony into empty comb in any case, until they had used all the honey taken with them. Neither would I unite a small diseased colony with a healthy one, till they had used the honey. I have known apiaries properly treated, where the malady has diminished to less than one per cent. of what it was a few years since.

As to Mr. Morgan's experience, reported on page 147, he *may* have foul brood; but it is so different from any experience of mine, that I think he must be mistaken in the way it was first contracted. Its progress was too fast.

He says, some time in September he scooped out of the hollow of a tree, several buckets of comb, dead bees, pollen—and I suppose some honey also. At the end of several days it was found fermenting, was thrown out, the bees were found carrying some of it away. A hive near the place several weeks afterwards gave a horrible stench on opening it, unlike any thing before. The hive was full of dead brood. Six more were found in the same condition.

It is not clearly proved that this disease originated as he supposed. It was September—perhaps the middle, when the tree was cut; it might have been the very last when the fermenting mixture was thrown out. The larvæ, just ready to seal up, seem to be just the right age to be affected by it. At the end of September, in this latitude, all healthy stocks have usually hatched their brood. They may be later there; but I think it hardly possible that enough larvæ just the right age to take the disease, to fill the hive so quickly. Proceeding at that rate, they could hardly last a year, as Mr. Alley's did. I think the cause should be looked for months previous to cutting the tree. As for remedies, I approve of Langstroth's, so far as removing at once the whole from the reach of the bees; unless the bees were Italian, it would hardly pay to try to save them at that season. I would disapprove of even trying to set them three miles from any others Suppose the bees from a tree in the woods take the honey from some of these hives, and deposit half way to the home apiary, what is to prevent a dozen more becoming affected mysteriously as these? If every hive was removed at once when attacked, we should hear less of the necessity of burning things.

M. QUINBY.

St. Johnsville, N. Y.

If the bee-keeper would not have his bees so demoralized that their value will be seriously diminished, he will be *exceedingly careful* to prevent them from robbing each other.—*L. L. Langstroth.*

The use of woollen gloves, when operating among bees, is objectionable, as everything rough or hairy has an extremely irritating influence on bees.

[For the American Bee Journal.]

That Bee Disease.

Mr. Editor:—I see in the November number of the Bee Journal, page 101, a communication from J. W. Seay, in which he demonstrates the cause of the Bee Cholera "as clear as mud." I cannot see how he could come to the conclusion he did, after examining as many hives as he says he did. But even admitting (which of course I do) that those *awful* honey dews did take place in his locality, that does not prove that it was the same all over the country. Wherever the bees died, the bee disease, whatever it was, was general everywhere that I heard from; but this great honey dew was not. Nor can I see why the bees should leave the hive if they died of old age, particularly when but few colonies died till after the weather was cool enough to confine the bees to their hive, some living till midwinter and even longer, and then dying. If they died of old age, why were they not found dead in the hive? It is not very common for bees that die with age, to leave their hive in winter time for that purpose.

I live in Eastern Indiana, and I also own bees in Northern Illinois; and by close observation I am satisfied that the bees died in both places from the same cause; and I am sure we had none of those sudden changes from scarcity to abundance, that Mr. Seay speaks of. It was a bad honey season straight through, in this part of Indiana; no surplus honey at all.

As soon as cool weather began to confine my bees to the hives, I noticed an unusual amount of dead about the entrances. I watched them closely and found that however cold the weather might be, more or less of the bees would come out. Some would die near the entrance; others would get several feet from the hive, then drop down and die; and some would take wing and fly out of sight when it was too cold for them to return, even if they had been healthy. They would commence coming out of their hives in the morning, even before it was quite light, no matter how cold it was. I soon noticed that many of them discharged their fæces in the hive, the entrances would be perfectly blackened therewith, and the tops of the frames would be in the same condition. If the day was slightly warm, there would be quite a stir among the bees; but of those that appeared to have the disease the worst, few would return. I watched them closely every day; whether it was cold or warm, wet or dry, they would come out, more or less, till every bee was gone, and in every case more or less honey was left, though not quite so full as Mr. Seay says his hives were. My neighbors' bees went the same way, and when asked they said the bees swarmed out and left; but, as Mr. Seay says, when asked whether they had seen them swarm out to leave, the answer was—No, but they must have done so, for they are gone and left plenty of honey! On examining those hives and finding them daubed as mine were, I told my neighbors that their bees did not swarm out and leave, but feeling an irresistible impulse to discharge the contents of their bowels, they left for that purpose, and never returned.

I watched my bees closely till ten stocks were dead. All went the same way, young swarms dying first, and every stand in the yard affected in like manner. I saw that something must be done or I should not have a bee left by spring. I examined them all, and found them all more or less affected by disease. Old stocks that had plenty of old honey, were not so bad. All the new honey was uncommonly thin. I went to work and took all their honey from them, added a portion of white sugar, boiled it down, skimming it clean, and then fed it to them again. They replaced it in the combs, and from that time on I did not lose another stock; but they did as well as I ever had bees to do. I told my neighbors what I had done. Those of them that were using movable frame hives did likewise, and saved their bees. Those that used the common box hives, could not adopt this measure, but some of them fed their bees with sugar syrup and saved nearly half of them. Those that trusted to luck altogether, lost all so far as I know. One man, who had twenty five stands, said it was all in luck any how; so he did nothing, and lost every bee. So much for the *Bee Cholera.*

If it was old age that was killing off the bees so fast, why should the altering of their food from very thin to good thick honey stop their dying? In my opinion the bee-disease, call it what you please, was caused by bad food; and when the bees were confined to the hive by cold weather they could not retain the contents of their bowels, and it being contrary to their nature to discharge their fæces inside of their hives, they made an effort to get out; and once out, they never returned. Thus their numbers wasted away, until all were gone. This, at least, is my experience, and I watched them closely both in Indiana and in Illinois, and on the way, going and returning. I know there is such a thing as bees gathering too much honey, and thereby preventing the queen from laying the proper amount of eggs, and the stock finally dying out from that cause. But that was not the case in 1868, in any locality that I visited.

B. Puckett.

Winchester, Ind., Feb. 10, 1870.

[For the American Bee Journal.]

Can robber bees be joined to a weak colony without caging the Queen?

In apiaries of large size it sometimes occurs that weak colonies are attacked by stronger ones, and robbed; and even a careful bee-keeper may not always discover it before the robbers have got a good start. A reporter to the Bee Journal, I do not recollect in what number, advises bee-keepers in such case to capture the robbers and unite them with the weak robbed colony. Now, does practice prove this to be good advice? Before I read the article, I had already, at four different times, attempted to remedy robbing, by shutting up the robbers, and placing the robbed colony in my cellar for a week or longer. In three cases out of the four the fertile queens were killed; and I therefore came to the conclusion that it was unsafe thus to shut up robbers with a weak colony.

In all cases where it may be desirable to shut up the robbers, I would advise the bee-keeper to cage the queen, and keep her caged for at least three days. But I cannot even then recommend such a process. The robber bees, after having been thus confined for eight or ten days, return in great numbers to their former hives, and in most cases recommence robbing immediately. Only where the bee-keeper can remove the robbed colony a mile or more from the old stand, would I advise shutting up the robbers, for the purpose of uniting them with those attacked, in order to strengthen the weak colony. Even in such a case I should greatly prefer to strengthen a weak colony by introducing in it a supply of bees procured from another apiary. A quart of bees taken from a distant apiary, kept confined in a hive with food, but without brood, can, without the least danger, be united in the evening with a weak colony that has a fertile queen. In this way, I have frequently in the spring, strengthened colonies which were so weak that they would certainly have perished, even if they had escaped the notice of robbers. A. Grimm.

Jefferson, Wis., Feb. 1870.

[For the American Bee Journal.]

Patent Comb Guides.

I see by the American Bee Journal and the Rural New Yorker that K. P. Kidder has purchased of G. H Clark, the patent right for the triangular comb guide. I have used the Langstroth hive for ten years, and have never used this comb guide; and I do not know what any one else wants to use it for. It is not a sure guide in the Langstroth frame, and I never saw a Langstroth hive with that kind of guide that had all straight combs; and I never saw a Clark hive that had all straight combs. As a general thing, six combs in the Clark hives are straight, while the seventh is very thick, and on one side, about half way down, the bees will start a thin comb, too thin to store honey in, and not thick enough for brood comb. I have seen a great many Clark hives where the combs ran exactly *across* the guides.

There is but one sure and simple comb guide, and that is the one that I have used for years. It is sure in all hives, and in every instance where it has been used it has proved a success. I have nothing new to recommend to most old bee-keepers, but to new beginners it is worth knowing, to say the least.

Instead of this patent triangular comb guide that has caused so much trouble during the last ten years, I use a "flat bar." To this I stick any old worker brood comb—no matter how old and mouldy it is, it is a sure guide. This I cut into strips, from one to two or three cells in thickness, according to the quantity I have on hand; but when such comb is scarce, one cell deep will do. With melted rosin and beeswax (not honey and beeswax, as your printer once made me say), I stick the combs to the "flat bar." The wax must be hot, and the work is done quickly, and the combs will not come off. When no old comb is at hand and cannot be obtained, I would turn an old box hive bottom up, and cut off two or three inches of the worker comb. This should be done early in the spring, before it is filled with brood. If no box hive is handy, take one or more frames from a movable comb hive and cut from them enough comb to make guides for a large number of frames, if needed.

The idea of raising the rear end of Langstroth hives, to make the bees build straight combs, is all moonshine. I have never seen an instance yet where the bees have done it.

I hope no reader of the American Bee Journal will be found foolish enough to pay Kidder, or any one else, one cent for the right to use this patent comb guide.

It is but a small job to put guide combs on frames enough for twenty hives. Simmer the wax and rosin in a shallow tin vessel, say two inches deep by six inches wide, and ten or twelve inches long. Old combs cut easy with a thin knife that has a straight rough sharp edge, made hot by dipping it in hot water just before drawing it across the comb. H. Alley.

Wenham, Mass.

☞ To attach strips of guide comb to frames or bars, the German bee-keepers use a cement composed of curd cheese and slaked lime, adding a little borax dissolved in water, to keep the cement plastic during the operation. This is more easily managed than a composition of wax and rosin, with no risk of destroying the guide comb. Dzierzon has always used the flat bar provided with such foundations to secure straight combs.—Ed.

[For the American Bee Journal.]

Puzzling Points.

In Vol. 5, No. 3, page 61, of the Bee Journal, Mr. Argo is somewhat puzzled. I have never been in the queen raising business—only raising queens for my own use; therefore will not attempt to answer his question, but will give some of my own experience.

I have had queens raised from pure mothers fertilized by black drones, that produced all three-striped workers, but would produce a majority of black queens. I have had queens raised from hybrid mothers and fertilized by pure drones, that produced handsomely marked workers and very light-colored queens. I have had queens from pure mothers fertilized by drones from a hybrid queen, that produced well marked workers, though all their queens were very dark-colored.

I am strongly inclined to be on the side of Mr. Thomas and Mr. Benedict, as to the impurity of drones from a hybrid queen. At all events, give me my choice and I will always take the queen that is raised from a pure mother and fertilized by a drone from a purely impregnated queen. On the other hand, let a person take for granted that drones from a hybrid queen are pure, breed in and in from such stock, and he will very soon find that he has mixed blood. There is something about this that has never yet been satisfactorily explained. We have queens that are partially fertilized, so that a small proportion of their eggs hatch workers and the rest drones. We have queens that produce all drones. We have queens that lay eggs which never hatch, either drones or workers. And we have queens that never lay an egg. And all these from the same mother, and all raised at the same time. I have taken eggs and larvæ from a pure queen, and given them to black bees to hatch and nurse, removing the black queen and all the brood, and substituting all Italian brood; and they raised all very dark-colored queens, and all those queens produced dark-colored workers. At the same time, queens raised from the same brood, and by Italian nurses, were all light-colored, and all produced light-colored and well-marked workers; and this too when all the drones that fertilized those queens were raised in one hive and produced by one queen. In fact, I have never succeeded in raising handsomely marked and light-colored queens, when they were nursed by black bees. I will not say that such has not been the case with others. I am just giving my own experience in the matter. I am not going to instruct others in what I do not know myself.

I am as much puzzled about some of these questions as Mr. Argo himself, or any one else can be. When I get hold of a queen that produces duplicates of herself, when raised by Italian nurses, and her workers are unmistakably well-marked, I am satisfied with her. Of course there is a slight difference in the coloring when raised at different seasons. Queens raised in full stocks when apple, plum, or basswood trees are in full bloom, will be a shade lighter than those raised late in the fall from the same mother.

If Benedict and Thomas were as anxious to palm off impure queens as some others, they would not have said as they did; at least that is the opinion of E. GALLUP.

Orchard, Iowa.

[For the American Bee Journal.]

Novice.

DEAR BEE JOURNAL:—Once more we greet you, and take great pleasure in informing you that our forty-six stocks of bees are all safely wintered, thanks to the Bee House. We can scarcely believe that the whole number put in, are really all on their summer stands, nearly as heavy as when put in. But such is the case. We set them out to-day (March 10). Some would have persuaded us that they would have been better left in a little longer. But we think they are better out now, if properly protected and cared for.

They seemed about as anxious to try their wings again, as we were to have them do it; and we are now going to furnish them with all the rye and oat meal they can be induced to take up.

Mr. Langstroth gives as one objection to special repositories for wintering, that the bees do not commence raising brood so early, but we think that with the start ours already have (and nearly all we have examined have considerable brood), that we shall have plenty of it as soon as it is desirable.

We are going to try stimulating some of them that are not quite as strong as the rest, and so we too want a bee feeder. Last year we used glass jars or tumblers, with a cloth over the top; but there was considerable trouble to fill these when they required it, and after some experimenting, we have hit upon something that answers our purpose admirably. What we required in a feeder was something that could be filled quickly; something that would not be expensive, as we might need a great many; something that would not be too bulky, as we dislike above all things to have such implements around in the way; and something that would not be getting all sticky and daubed over with honey, as we fear we might take a dislike to the business.

Now, Mr. Editor, we will tell you all about it and make it public, if you will first head it (for we want a little of the credit of the invention),

NOVICE'S BEE-FEEDER.

Get three pieces of glass all alike in size, say three by four inches square; stand them up on end, so as to make a hollow prism; slip a rubber band around them, about half an inch from the lower end; now lay a piece of thin cotton cloth over the top, and with your hand crowd it down inside so as to come about half an inch from the bottom; put a second rubber band over cloth and all, about half an inch from the top; cut off the cloth close to the top band, on the outside, and it is done. Set it over a hole in the honey board or top of the hive, and all that is necessary is to pour in your honey or syrup, and the bees will take it through the cloth to your entire satisfaction. You can feed fifty stocks, as fast as you can go from one hive to another; not a bee can get in your way; and the way the little chaps crowd in around the bag is a sight to see.

To make them more nicely, get some of the "women folks" (we really do not know how we should get along *without* them, though it is a task sometimes to get along *with* them) to sew you some nice little bags of three triangular pieces of cloth. When the top is rolled over the outside of the top of the glass, and your band put on, it looks quite tasty.

When you get through with them for the season, slip off the bands; get those same "women folks" (that is, if you have got the right side of them; and you can't keep bees unless you have) to scald the whole apparatus, and then you can pack them away in a nice little box (the feeders we mean, of course; not the "women folks") till wanted again.

Any broken glass will make them; or you can use wood, but as in that case you cannot see inside, and it is not so clean as glass, we think the latter will pay. Strings or wire will answer in place of the rubber, though not so convenient.

Now, Mr. Editor, will you allow us to discuss BEE JOURNAL in these pages? You allow almost every liberty, even for patentees to crack up their respective hives and inventions, almost as much as if they paid a dollar a line for the privilege. We think you once said that in all these discussions you had faith that the truth would come to the top at last; and on looking back over the pages of the Journal, we were astonished to find how much truth *has been* brought out.

Well, we have three Bee Journals—or rather one, and two *so-called*—and another is about dawning from Missouri. We don't know what this new one may be; but we can't help contrasting our old AMERICAN BEE JOURNAL, with the full liberty allowed on its pages, with some of the new ones that don't allow or at least don't *mention* the existence of any other form of hive than the one owned by the publisher, and advertised all over the paper continually. We should not be surprised that the publishers of such might make a good thing of it, if they sent their papers *gratuitously* to every body.

Another opens with a Gift Enterprise, on a system of luck and chance, and promises to tell his subscribers how to make more honey from every swarm of bees than ever Jasper Hazen's hive would give, good seasons and bad.

What would our BEE JOURNAL be, if only one kind of hive was to be considered? For this very reason, we should consider the *Rural New Yorker* worth more as a bee journal than *all* that we have seen, except the one on whose pages we are now writing.

Orange Judd & Co. once said, that they had nothing to sell, except the *American Agriculturist;* and that their whole business was to make that as valuable as they could to *every body*. Such being your motto also, cannot we well afford to pay two dollars per annum for the AMERICAN BEE JOURNAL, no matter what others charge? If we are speaking strongly, we have only to say that standing up for old and tried friends is only another "well rooted" peculiarity of

NOVICE.

P. S.—Next month we will submit our statement, with that of friend Argo, on our respective year's work for 1869. To get a queen or lose a queen, "that's the question."

[For the American Bee Journal.]

Sacred History of the Bee and Honey.

MR. EDITOR:—As the columns of your excellent Journal are ever open to the discussion of anything pertaining to the bee and its products, I have thought it might perhaps not be uninteresting to your readers to know something of its sacred history, and as I am to-day unable to get around, I will spend the time in the examination thereof.

To begin. The first intimation we have of such an insect as the bee, is by way of inference, and that from reading Gen. 24, 59 in connection with Gen. 35, 8; where we have the Hebrew name—Deborah—given. This, according to the generally received chronology, was about the year 1955 B. C.

Again, in Gen. 43, 11 the patriarch Jacob, in giving directions to his sons on going down into Egypt a second time, tells them to "take of the best fruits in the land" with them—literally that which was praised the most, or "the song of the land;" and, among others, he names "a little honey." The things enumerated, as we are informed, grew well during a drought; and as a famine now prevailed, would be more highly appreciated in Egypt. Besides, we are led to the belief that it was an article of commerce previous to this time; Gen. 37, 25, and inferences drawn from the Homer and Herodotus at a later date.

Again, in Lev. 2, 11 we read that honey was not allowed as a burnt-offering amongst the Israelites. The reason for this we cannot now recall.

But in Deut. 1, 44, we have the name of our industrious friends brought directly before us, and in a sense which does not highly recommend them—that is, of chasing. This gives us some intimation of their character then, and which later writers confirm. *Vide*, BEE JOURNAL, Vol. 5, Nos. 5 and 6; and this enables us the more fully to understand the expression of the Psalmist—"They encompassed me about like bees." Ps. 118, 12.

Again, in Deut. 32, 13, honey is spoken of as one of the blessings conferred upon the chosen people, in that they should even "suck honey out of the rock," and their land should "flow with milk and honey."

Again, the case of Samson, Judges 14, 8, in which both bees and honey are spoken of, under peculiar circumstances, being found in the carcase of a dead lion, which he had some time previously slain. We quote from an article before us: "The lion which he slew had been dead some little time before the bees took up their abode in the carcase, for it is expressly stated that 'after a time' he returned and saw the bees and the honey in the lion's carcase; so that if any one here represents to himself a corrupt and putrid carcase, the occurrence ceases to have any true similitude, for it is well known that in those countries, at certain seasons of the year, the heat will in the course of twenty-four hours so completely dry up the moisture of the dead camels, that without undergoing decomposition, their bodies will long remain like mummies, unaltered and entirely free from offensive odor."—(*Oedman.*)

Again, in 1 Samuel 14, 26–29, honey is spoken of, in connection with a curse; and the eating of it came well nigh being the death of David's most intimate friend in the days of his adversity; but which would have resulted in much more good, had all at that time participated.

Again, in Ps 19, 10 and 119, 103, Prov. 5, 3; 16, 24; 24, 13; 25, 27 and 27, 7; and in Songs of Solomon 4, 11 and 5, 1, there are comparisons made of honey and the honey-comb, to sundry moral virtues, &c.; and in Ezek. 3, 3, and Rev. 10, 9, by way of contrast.

In Isaiah 7, 18, the Assyrian nation is compared to a bee; and this no doubt has reference to them as an instrument of punishment upon the Jews.

The foregoing passages are the principal ones relating to our subject, found in the Old Testament. We will now take a glance at the New. The first that meets the eye here is found in Math. 3, 4, in connection with Mark 1, 6, in which the manner of living of the forerunner of Christ is spoken of; and as J. D. M. in the February number has remarked that, since honey formed a prominent link in the chain of man's redemption, surely this ought to give us some encouragement in the prosecution of apiculture.

Again, in Luke 24, 42, we find the Saviour himself indulging in eating of a piece of honeycomb; and would that all might profit by the lesson there taught, that in very deed he was risen from the dead, and rejoice in their Divine Master.

In conclusion, nearly all the writers of the past eighteen centuries have given, directly or indirectly, the subject of our remarks a passing notice. And from this we see that the honey-bee has a written history of over three thousand eight hundred (3800) years—a history intimately connected with that of our own race; and that its products have ever been, as they still are, articles of commerce. J. W. BARCLAY.

Worthington, Pa., Feb. 19, 1870.

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[For the American Bee Journal.]

Price's Revolvable, Reversible, Movable Comb, Double-cased, Sectional Bee-Hive. The Casket.

It is hung horizontal and angling. It is the best hive for wintering, breeding, or stimulating bees; and has the best surplus "sectional" honey boxes and storage facilities.

Mr. Editor, and all bee-keepers, I wish to bring to your notice the description and superior advantages of the above hive, over all others, on the above enumerated points, in accordance with the expressed wish of several correspondents.

In the first place, I wish to say that having failed to winter my bees satisfactorily in the several ways it is usually done by bee-keepers; and after making all kinds of experiments, I have perfected a method and invented and patented a simple yet efficient hive and apparatus for its accomplishment. I claim it to be the best hive and method of wintering bees, either on their summer stands, in a bee-house, or in a cellar, by the removal thereto of the casket containing the combs, bees, and honey. It is a sure protection from loss and destruction of bees on warm days, in winter and spring, when there is snow on the ground, from their flight and falling on the snow. This misfortune with me has been as destructive as cold—and the warmer the hive, the more destructive have been warm days.

This hive is also the best and safest ventilating hive ever made; it is impossible to suffocate a swarm of bees confined in it; it cannot be done under any circumstances. But a swarm put away for wintering in it, is safer from the usual mishaps of wintering, than by any other mode of wintering yet devised.

I also claim for my hive the best and warmest breeding apartment; it being the best ventilated also. It is the best hive for either the bees reaching the combs, or the shape and position of the combs for natural clustering of the bees for rearing and protecting the brood, and to facilitate the queen's laying eggs in the combs in circles.

It is also, by its facility of revolving and reversing the "casket" brood chamber, the best hive to stimulate the queen to the production of brood, at any wished for period in the early spring. The brood apartment can also be examined, without moving the surplus honey boxes or surplus sections; making it the best and handiest hive for artifical swarming.

The V shaped bottom makes it also the best self-cleaning hive, harboring neither chips of wax or other foul matter.

By means of my reversible casket, I claim for my hive, the best means of stimulating the queen to the production of brood during a temporary drouth in summer. The revolving of the casket will immediately stimulate an idle colony to work, during the honey harvest—the same as an interchange of combs, from place to place; without danger of maiming or killing the queen. By means of it, likewise, I can get straight combs in my sectional hive, by removal of the platform. Then the casket and sections are laid horizontal, or flat, on the bottom of the exterior case; and when the swarm have filled the sections with combs, the casket is placed on the platform, and the combs are hung angling. Thus securing straight combs, which cannot be done in a full hive of empty frames hung angling.

I also claim that from the shape of my hive, and by the use of my sectional surplus honey boxes (they being on a level with the brood chamber), I secure the best surplus honey facilities. The bees can reach the boxes or sections, without going into the breeding apartment. My boxes are likewise of the best shape for the honey emptying machine, for home use, or for transportation to a distant market.

The descriptions and drawings will appear, as soon as I can get the latter engraved.

JOHN M. PRICE.

Buffalo Grove, Iowa.

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[For the American Bee Journal.]

Bee Stings.

MR. EDITOR:—In these days of waiting, while the little honey-gatherers are closely closeted at home, it may be well to take thought for the future. Spring is fast hastening along, and the bees will soon be abroad. We may now tell how heroic we were last season in passing among the hives and in handling the bees without veil or gloves; but a test of courage is soon to be demanded again. Inasmuch as we dread to be stung, we are enlisted in sympathy for those who may be so unfortunate. Some of our best officers among apiarians occasionally get wounded; while many of us who rank among the novices, could give credit to scores of bees which left a sting with us, as a piercing memento of their zeal. We are safe in saying, we know we shall be stung if there are any bees in our vicinity. How quickly all our bravery subsides, when the sweet little bee is avenged. Benevolent hearts have studied to find a "healing balm." We have no reason to doubt their success, and really believe it may be found while carefully passing through the following list of remedial agents.

1. The first thing to be done after being stung, is to pull the sting out of the wound *as quickly as possible.* After the sting is removed, the utmost care should be taken not to irritate the wound *by the slightest rubbing.* However intense the smarting, and the disposition to apply friction to the wound, *it should never be done*, for the moment that the blood is put into violent circulation, the poison is quickly diffused over a large part of the

system, and severe pain and swelling may ensue. —L. L. Langstroth.

2. Cold water. In my own case I have found *cold water* to be the best remedy for a bee-sting. The poison being very volatile, is quickly dissolved in it.—*Ibid.*

3. The juice of the ripe berry of the common coral honeysuckle (*Lonicera caprifolium*) is the best remedy. The berries or the expressed juice may be preserved in a bottle, well closed, and will retain its efficacy more than a year.—Andrews.

4. The milky juice of the white poppy.

5. Leaves of the plantain crushed and applied to the wound, are a very good substitute when water cannot be obtained.—L. L. Langstroth.

6. Spirits of hartshorn. In cases of severe stinging its internal use is also beneficial.—Bevan.

7. The juice of tobacco.

8. Catch as speedily as possible another bee, and make it sting on the same spot.—*English Apiarian.*

9. Bathe the wound in chloroform.

10. Take a small piece of saleratus, moisten and apply it to the part once or twice, and almost immediate relief will be experienced.

11. Take muriatic acid and dissolve saleratus in it, as much as it will take up. Apply this, as soon as stung.—G. B. Avery.

12. A raw onion cut in halves; one half applied till it becomes warm; then change for the other half.

13. Mud or clay made wet, and changed often.

14. Soft soap and salt.

15. Select three species of plants, either trees, shrubs or herbs; take one leaf from each, and bind them on the wound.

16. Bathe with a solution of chloride of lime.

17. Wet a piece of indigo, and rub it on the spot. —Affleck.

18. Apply aqua potassa.

19. The great secret after being stung, is to keep the spot cool, and, *not rub it at all.*—Kidder.

20. Dr. Latour proposes the following: 1st, pull out the sting; 2d, foment the place with iced water, or else extract of ammonia; 3d, apply an impenetrable coating of collodion, rendered elastic by the addition of one-tenth part of castor oil, whereby the production of heat in the living tissue is prevented and the inflammation avoided.

21. Bruise a few leaves of the catmint plant (*Nepeta cataria*); press out the juice, and apply it to the wound.

22. Have about three quilts or comfortables spread on a bed. Then wet a sheet in cold water, wring it, and spread it on the former. Wet another sheet, and wring out the water so that it will not drip. Spread this on the first sheet. Now strip the patient to the skin, lay him on the wet sheets on his back, and fold them about him; then fold the quilts around him in the same manner; and put wet clothes on the face and forehead. Let him lie thus for thirty minutes, and all will be right.—E. Gallup.

23. A strong solution of sugar of lead.—O. Dyer.

24. A freshly prepared solution of hydrate of lime (lime water).

25. First extract the sting, then wash the part with cold water, *rubbing it well* for half a minute; then *rub with a dry towel* for half a minute more. Then apply about 4 teaspoonfuls of spirits of camphor, and *rub for another half minute.*—M. Smith.

26. Apply kerosene oil to the wound.—P. R. Russell.

27. Prepaired chalk made into paste with water or saliva, and applied to the wound.—J. B. Barton.

28. Coal oil applied to the wound renders immediate releif.—P. Brickley.

29. For bee-stings use spirituous liquor internally and externally. Ammonia is good as a wash. Water is the best of the solvents, and is therefore good.—J. M. Marvin.

30. Pull out the sting, and pass a needle into the wound till you can press out some blood. It will prevent swelling.—J. Kimball.

31. Extract the sting, and keep the spot moist with spittle.

The editor may perhaps think, by this time, that I should ask pardon for this intrusion. Perhaps I should. I certainly wish him no harm in the perusal. The list may serve as a curiosity, if nothing else. No. 1, says that the wound should *not be rubbed at all*; while No. 25 regards *the rubbing* as very essential. In my own case, I found No. 21 proved very satisfactory.

Henry C. Blinn.

Shaker Village, N. H.

[For the American Bee Journal.]

When does a young queen commence laying drone eggs?

And,

Will introducing a young fertile queen prevent swarming?

In the latter part of June, 1865, I concluded to introduce a young fertile Italian queen in a colony of black bees, which was strong, but occupied a small hive of only about 1300 or 1400 cubic inches. When removing the black queen I noticed that three frames, which I had previously inserted, were nearly filled with drone combs, containing eggs and larvæ from the black queen. I took away all these drone combs, and introduced the young Italian queen, which had commenced laying the day previous. She was confined in a queen cage, but I liberated her after the lapse of forty-eight hours. Three days later I examined this colony again, to see whether the Italian queen was accepted or not. I found the three frames again filled with drone combs, and every cell contained an egg! I also found three queen cells started in the upper part of the hive, but still empty. I made another examination three days later, and found small larvæ in the drone cells, and two eggs and one very small larvæ in the three queen cells. The basswood trees were at this time in blossom, furnishing a very plentiful supply of honey. On the following day a swarm issued from this hive, and was accompanied by the young Italian queen. I feared, of course, that, unobserved by me, the bees had somewhere reared a queen from the brood of the removed black queen, but soon found that this was not so. The queen cells before observed, were sealed in due time, and on the sixth day thereafter the two youngest cells were removed. An Italian queen and a large number of Italian drones were hatched, and to my great gratification the young queen subsequently proved to be purely impregnated. The black swarm with the Italian queen, became changed to a pure Italian colony, by the middle of October.

That same season, on the 7th of May, I inserted three queen cells from an Italian colony, in three black colonies respectively, from which their queens had been removed the day previous. The queens hatched from these cells May 11th, were impregnated, and became fertile in due time. Each of these three colonies swarmed on the 15th of July. Only a few Italian workers had yet commenced out-door labor at this time; but nearly all the workers in those three swarms, at the time they issued, were Italians.—Young fertile queens introduced into a colony are therefore not always a preventive of swarming. In fact, I have not yet discovered any method by which swarming can be prevented, except by weakening the colony. Mr. Quinby's queen-yard would not be a preventive with me, so long as there was a chance for another swarm in the apiary to come out, as the bees would join such swarm, if they missed their own queen on coming out. Prime swarms, with old queens that could not fly, united in three instances with second swarms and were satisfied with the young virgin queens. A. Grimm.

Jefferson, Wis.

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[For the American Bee Journal.]

The greatest enemy to Bee-keeping.

A correspondent says I have been reading the Bee Journal, have never kept bees, but am now inclined to try my hand. First and foremost, what diseases have I to contend against? Or what is the greatest enemy to bees and bee-keeping? And he requests an answer through the Journal, but does not give his name or address; and I am strongly inclined to think that his questions are asked for the purpose of quizzing or puzzling. Nevertheless, I am going to comply with his request; and here is the answer—Ignorance. Just that one word answers the question, and covers the whole ground. Ignorant bee-keepers destroy more bees than all other causes combined, according to my experience.

In my own ignorant experiments during my lifetime, I have destroyed hundreds of dollars worth of bees; and now, when I look back on some of those foolish experiments, I wonder at my own former ignorance. But I never became discouraged, I always learned something by my failures. I will relate one instance and perhaps more. In my first experiment in wintering bees in the cellar (and I had then an excellent, dry, airy cellar) I set in twelve good strong heavy swarms, and left the balance on their summer stands as usual. Understand, that I had *no books* to guide me in any of my experiments, such as bee-keepers have now-a-days. By the first of February ten out of the twelve were all dead—having died with the dysentery, course, as the front of the hive, bottom-board, and combs, all distinctly showed: and I concluded at the time that it was the malignant type, and that physic could not have saved them; at least that was my opinion, hastily formed from a *post mortem* examination. But I soon began to doubt the truthfulness of my conclusions, for the other two stocks were in excellent condition. They were all in common chamber hives, all ventilated alike at the bottom; but upon examination of the two that were in good condition, I found that in setting them in the cellar I had accidentally uncovered the holes into the chamber, and as the doors to the chamber did not fit closely, there was an abundance of upward ventilation. The ten that died had no upward ventilation whatever. Thus we see that ignorance in this case destroyed the ten stocks, worth seventy dollars; but accident saved two. But not exactly satisfied that I had discovered the true cause, the following winter I set in twelve more colonies, to ten of which I gave upward ventilation, and to the other two I gave only ventilation at the bottom. In about three weeks after setting them in, I discovered that the two had the dysentery and began to smell badly, with large quantities of dead bees on the bottom-boards and the combs damp and mouldy. I then opened the holes at the top, and they soon came all right again. The ten all wintered in excellent condition, and did not consume near the amount of honey that those did on the summer stands.

No person at the present day need commence bee-keeping under the same disadvantages that I had to contend against. Now you can have the experience of others to guide you when you begin. E. Gallup.

Orchard, Mitchell Co., Iowa.

* * *

This has been a terrible winter for bees in Berkshire; or rather the last summer was so unfavorable for the production of honey that the bees could not gather a sufficient quantity to carry them through the winter. Out of 19 swarms belonging to Peregrine Drew of Pittsfield, one only survives. John Barnard had 21 swarms last fall, and "took up" 13, obtaining but 28 pounds of honey, and this he fed to the remaining hives, but only three are still alive. H. D. Burghardt has lost 22 out of 25 hives during the winter. Live bees will be high in the spring, and honey will be higher next summer.

* * *

Structure is always expressive of the habits of the bees, and is as sure a line of separation, or means of combination, as instinct could be were it tangible. Hence the conclusion always follows with a certainty, that such and such a form is identical with such and such habits, and that in the broad and most distinguishing features of its economy, the genus is essentially the same in every climate; for climate does not act upon these lower forms of animal life, with the modifying influence which it exercises upon the mammalia and man.—*Shuckard.*

[For the American Bee Journal.]

Confinement of Honey Bees.

How long may honey bees be kept in a cellar, without injurious effects from continuous confinement?

In the spring of 1868, I rented the privilege of starting my southern apiary, and removed to the location one hundred colonies, over a very rough road. The owner of the lot on which I had started the apiary, becoming dissatisfied, I was compelled to remove the hives in the fall to another location, about a mile westward, to a timbered lot, which I owned there. Not being apprised early of the necessity of making the change, I did not commence digging a cellar for the reception of bees till the beginning of October, and as the road over which they had to be carried always becomes impassable as soon as rainy weather sets in, I deemed it advisable to make the removal on the 20th day of that month. As there was then neither house nor fence on the premises, I had to run the risk of storing the colonies in the cellar, just finished, with the mortar still soft; though a frame house was erected over the cellar shortly after. As soon as the house advanced I put a tenant in it, who fearing that a stock of potatoes and turnips which he intended to winter in it would freeze in the cellar, plastered up all the crevices between the ceiling and the side walls. Having other pressing business to attend to at the time, I neglected to instruct the tenant to make provision for ventilation. It happened also that the outer cellar door had swollen from dampness and could not be closed, and a space about an inch wide remained open. This was all the chance the bees had for pure air and ventilation. When I visited the place, six weeks later, I found, to my great surprise, the bees perfectly quiet and healthy, and the hives dry. A number of bees, however, that had crawled out, lay on the floor, covered with mould. Six weeks later, the condition of the bees was found to be about the same; and so likewise on a still later examination.

I did not take these bees out before the 14th and 16th of April following, they having then been in the cellar about a week less than six months. I commenced removing them on the 14th, but owing to cold and rainy weather, I could not finish the work till on the 16th; and this was the condition in which I found them. Fifty-eight colonies in eight-frame Langstroth hives, were all of them alive, with very few dead bees. The combs were dry and clean, without the least particle of mould; and no candied honey was found in the combs. Of sixty-three box hives, which were inverted with the bottom board left on, four had died, and nine had combs more or less mouldy. Those that were not mouldy were in an exceedingly good condition. Those that had moulded were probably weak when wintered in; and of the four dead ones, two had probably been queenless ever since swarming, and had been overlooked, as I found on examination of the combs that these contained a large amount of bee-bread.

The whole number of colonies had consumed a very small amount of honey, and appeared in every respect in excellent order. How very damp the air in the cellar must have been, may be inferred from the fact that the cotton cloth on a bee hat, which had been carelessly left on a cellar window, had become mouldy and was perfectly rotten. I forgot to mention that I found it quite warm and pleasant in the cellar, on every examination made, the temperature being probably 43° F.

What will those who think bees may not be kept confined more than six or seven weeks, say to this? more especially when informed that those bees were not supplied with a particle of water during all this time; and that some of the colonies had about six inches square of brood when brought out. They commenced carrying in pollen on the 16th of April; and on the 17th of May, when I visited them in company with Mr. J. Crowfoot, of Hartford, Wis., we found most of the hives filled with bees, brood, bee-bread, and honey. On the 25th, two large natural swarms came out, with every prospect that many more would follow in a few days; and actually twelve hives swarmed on the forenoon of the 5th of June.

Jefferson, Wis. Adam Grimm.

[For the American Bee Journal.]

Wax Scales found in Winter.

I have heretofore supposed that wax scales were formed in the wax pockets of bees, only in warm weather, and then, only when the bees were about to build comb; and have always regarded its production as entirely within the control of the bees themselves, and subject to their will as much as comb-building is. That is, I thought that when they wanted wax for comb-building, they were obliged (impelled by instinct) to eat more abundantly than usual, and to hang clustered for some time, for the purpose of generating unusual heat; and that, by this means, and in this manner only, could wax be produced. I believe this idea is the one usually advanced by writers on bee-culture. But I have recently noticed some facts that seem to run counter to this doctrine.

On the 17th of February, I found in one of my hives a dead bee that seemed rather larger than usual. Careful examination showed scales of wax in its wax pockets. Two others, of five examined, also showed wax scales. The remaining two showed no wax.

The hive first mentioned was full of combs, with a good supply of bees, some brood in two combs, but rather deficient in stores. This colony and a dozen others were fed last fall with syrup made of fifty pounds of sugar, forty pints or pounds of water, and one pound of glycerine added in accordance with your suggestion, Mr. Editor, to prevent crystallization—(a good idea).

To prove to you that I was not mistaken about the wax scales, I removed a dozen or so with a needle, and melted them together on a piece of white paper, which I send for your inspection.*

Here certainly is a case where wax was produced at a time of the year (February 17), and under circumstances (a full hive), that would render it impossible to make use of it in comb-building. Bees do not use *new* wax for covering brood cells in *old* comb. The cell covers are always of the color of the comb, which leads me to think that the wax for capping brood, and also for building queen cells, is taken from the adjacent comb in all cases.

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* Wax, undoubtedly.—Ed.

It cannot be said, in explanation of this, that these three wax-bearing bees may have died last summer, during the comb-building season, for they were found on the top of the covering laid over the frames of the hive, where they must have crawled and died within ten days of the above date, as I removed all dead bees from that place at that time.

My bees are wintering finely in the shallow form of the Langstroth hive, ten inches deep, with all honey-boards removed, and the frames covered with a sort of cotton batting comforter, made precisely like a comforter for a bed. I like these much better than old carpeting or old clothes. I had one made for each hive, costing twenty cents apiece. By lifting one corner of these comforters, I can see the condition of each hive at a glance. The bees are always found clustered up against these warm comforters, and communicate over the tops of the frames, instead of through winter passages. The only swarm lost this winter was in a tight-top box hive, set inside of an empty Langstroth hive.

R. Bickford.

Seneca Falls, N. Y., Feb. 20, 1870.

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[For the American Bee Journal.]

Maple Sap for Bee Feed.

Mr. Editor:—As I see many articles in the Journal on feeding bees, I will give you or your readers one for spring feed.

When you set out your hives in the spring, and the weather gets warm enough for the bees to carry in rye meal or pollen, bore some maple trees, and in a proper vessel catch the sap that runs from them. To three quarts of this sap add one pint of honey, and when your bees get to flying briskly, make the mixture lukewarm, pour it in a sugar trough and lay some empty combs or cut straw on it, to keep the bees from drowning. If you have no honey, make a syrup of white coffee sugar as a substitute; but honey is better. This makes a light thin feed; but it answers every purpose for spring feeding, to rear brood.

If, as Mr. Quinby says, it will attract some of your neighbors' bees, remember it is so cheap that you can afford to help them a little, for the great advantage you will derive from it yourself.

You can use the maple sap during the time the trees will yield it, and have some of it boiled down to a molasses. This you can afterwards dilute, and keep up feeding till the fruit blossoms come in. Where you have from forty to sixty stocks, there is little danger of feeding too much; though the bees should not fill up the combs in the brooding apartment, so as to stop breeding. Nor are you likely to feed too much in that way, at this time of the year, as so many cold days occur, on which bees cannot fly out. The more you feed, the more you stimulate the queen, the more she will lay. My bees added more honey to each colony last spring, with spring feeding, than they did in the time of fruit blossoms. It is the best plan I have tried to promote early breeding or early swarming, and to have plenty of bees when the locust and fruit trees come in.

If you feed inside of the hive, make your feed much stronger, and also feed with warm feed in all cases.

To make passage ways through combs of frame honey, take a half inch bit and bore a hole in the end of a small piece of wood; saw blocks one and a fourth inches long; split pieces off very thin, cut a hole in the comb and insert the wooden block, and the bees with not close the hole. Small tin tubes inserted in the same manner, will also answer the purpose.

A. Chapman.

New Cumberland, West Va.

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[For the American Bee Journal.]

Cost of producing Honey.

Mr. Editor:—I lately saw a statement in the Minnesota papers, copied from the *Onatonna Journal*, stating that J. W. Hosmer, of Janesville, Minnesota, "places the cost of producing honey at *four cents* per pound. One hive purchased in June last, produced four hundred pounds of honey and six swarms of bees." This is a truly wonderful yield. If J. W. H.'s bees winter well, he will no doubt be able to show the most prolific record of any man living, of success in bee-culture.

My experience in the last ten years has been that, on an average, bees have not produced over twenty-five pounds of honey, per colony, and one good swarm of bees each. In the past three years, great improvements have been made in the cultivation of bees; and the time may come when honey could be produced at twelve cents per pound; but at present twenty cents is as low as man can make it profitable to sell for. Four cents per pound is all gammon! It would not pay for taking out losses which occur yearly.

We should like to hear from different practical bee-keepers on this question, through the Journal; and if any way has been devised to produce honey at four cents per pound, we would delight to see the figures and get hold of the science.

S. B.

Stockton.

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The swarming season varies exceedingly in the United States. In Texas, swarms issue early in March, and in the Southern States they are quite common in April. In the Middle States, May and June is the usual period; and it is somewhat later as we proceed further North.

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After-swarms usually build the most regular worker combs; and if they lay up sufficient stores for the winter, they generally make the best stock colonies.

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If colonies are moved in the line of their flight, and *a short distance only at a time*, no loss of bees will be incurred.—Langstroth.

THE AMERICAN BEE JOURNAL.

WASHINGTON, APRIL, 1870.

☞ We are requested to state that a new post-office having been established near his residence, Mr. Gallup's address now is "E. Gallup, *Orchard, Mitchell Co., Iowa*"—of which his correspondents will please take notice.

The remarks of our correspondent, Novice, give us a fitting opportunity to say again, distinctly, that the American Bee Journal is not published in the interest of any patented hive, but exclusively in the interest of bee-culture pure and simple. *This position it will continue to maintain.* While every invention or device pertaining to bee-culture, patented or unpatented, is entitled to be noticed, in our pages, it must be understood that its merits or demerits are matters open for discussion, without fear or favor. In these discussions, however, the subject must ever be kept strictly in view, and all mere personalities avoided.

For feeding bees actually or prospectively in want, use ordinary pure honey or sugar syrup, and feed regularly every evening till they are properly supplied or they can supply themselves from natural sources. But for stimulative feeding, merely to encourage brooding, use honey or sugar syrup very much diluted, giving it in small doses only every other evening. They will thus obtain the water needed for the brood, and have less occasion and less disposition to leave their hives in quest of it, at times when the weather is unfavorable for such excursions.

Beginners in bee-keeping should not, when going into the business, build costly bee-houses, provide high-priced untested patent hives, purchase a large number of colonies, or buy "three-banded," Italian queens at a time when as yet they can hardly tell a drone from a worker. Begin moderately and hasten slowly. The needful experience in practical bee-culture is much more easily and far more efficiently acquired, by careful attention to a few choice stocks, than by a hurried supervision of a large number, even with the aid of manuals and text books. Plain, simple movable frame hives too, will be found better suited for the requisite manipulations, than fanciful and complicated contrivances devised by persons really ignorant themselves of the habits and wants of bees. And colonies placed in an open situation, with their hives readily accessible from all sides and somewhat sheltered or shaded by trees or vines, will be much more conveniently managed than when placed in ordinary sheds or out door bee-houses. Study first to know what is required for success, and then extend your operations when you are sure that you can have the business "well in hand."

In Prussia, assuming 100 to represent the average annual product of honey, the yield last year, in first class districts was 126½; in second class districts, 100⅜; and in third class 62.

In first class districts, the season opened May 15, and closed September 16; and in second class districts opened June 8, and closed August 4. Many strong colonies increased six pounds in weight on some of the best days. The increase of colonies by swarming was about 100 per cent. Virgin swarms were common. Fall pasturage was rather scarce. Buckwheat and heather yielded honey in only a few districts.

In East Prussia, standard or magazine hives are most generally in use, though some Dzierzon hives have been introduced. In West Prussia, straw hives are still most common, improved hives being found in few apiaries. In Lithuania straw hives largely predominate; and in Marsowa (part of Prussian Poland) log hives or "gums" are almost exclusively used.

The "foulbrood question" received rather singular treatment at the late German Bee-keepers' Convention. It had been announced as among the prominent topics for discussion, the debate to be opened by Mr. Lambrecht, as customary in such cases, and in accordance with the proceedings of the previous Conventions. But when Mr. L. commenced speaking he was interrupted and literally "coughed down" by a seemingly preconcerted opposition, and the subject was then gently *shelved* with some cursory remarks from various parties. At this distance, it strikes us that Mr. Lambrecht was not fairly treated. We say this without regard to the theory he advocates. According to the published programme he had a right to expect a hearing, and should have been allowed at least as much time as is ordinarily conceded to speakers on other topics, unless his remarks were entirely irrelevant, and then it would have been the province of the President to interpose. Nor does it mend matters to say that Mr. L. is prompted by mercenary motives, when the Convention just a year before awarded to Mr. Köhler a large pecuniary gratuity for disclosing that which was not strictly speaking new, or his own discovery. If Mr. L. has really devised a mode of curing malignant foulbrood, without destroying bees, combs or hive, it is one of infinitely more value and importance in bee-culture, than the Köhler process can ever be; and the Convention might very properly have devoted an entire day to a candid investigation of it. It was not at all necessary for Mr. Lambrecht to disclose his remedy. All that was proper was to request him to submit it to the most rigid test, and to appoint a committee to make that test. If he had refused to submit to this, or submitting failed, the case would have been bravely altered, without impairing the dignity of the Convention. As the matter stands, it is left at least in doubt. Prominent members of the Convention—themselves excellent and eminent apiarians, reject Mr. L.'s pretensions; while the Rev. Mr. Kleine, Mr. Gravenhorst, and others equally eminent as the former, speak confidently of the process as an efficient remedy. Time will show who is right. The proceedings referred to have at least given greater prominence to the subject; the disease will be more diligently studied by scientific men; and sooner or later probably we shall have a remedy—whether it be that devised by Mr. Lambrecht, or one proposed by some other successful investigator.

Cheaper than Cheap!

Honey at four cents a pound incredible? We fear that our esteemed correspondent—the more commendible for his singular brevity—is yet greatly "behind the times," and far from being fully posted in the matter of the *prospective* production of honey. Why, sir, the new inventions and improvements in bee-culture, like the discovery of gold in California, are destined to unsettle the markets of the world! Does he not know, too, that mankind are no longer jogging along in old-fashioned snailpace style, but tripping it on "fantastic toe," with the speed of light? Has he not yet learned that, in these days of rapid locomotion, even seven-league boots are *slow;* while telegraphic despatches shoot ahead of the passing hour,

> "And panting Time toils after them in vain?"

Why, at the present rate of progress, and in view of the astounding advances in bee-culture, with which the "impending crisis" threatens to overwhelm us, honey, that "sweetest of all sweets" (so universally coveted and so unanimously admired), will doubtless quickly become a drug in the market, when, like a ride in a New York ferry-boat, you will be solicited by importunate runners, to *take* it!—There, now, for instance, confronting us complacently, is that admirable, multilocular, protoplastic protean Hive, which can be indefinitely expanded and enlarged like an India rubber balloon, or subdivided infinitesimally like a polypus! Will not this original and most ingenious device, just brought down bodily from Shakespeare's "highest heaven of *invention,*" foster increase of stock *ad infinitum,* and accommodate with comfortable quarters, hosts of busy workers, though far more multitudinous in number than the grand army of Xerxes? And will not these hosts garner up and convert into "surplus" every particle of saccharine found in the vegetable kingdom from "Greenland's icy mountains to India's coral strand," or ong the entire terraqueous circumference of the ire-girdled earth?

hen, too, there is that newly conceived most delectable theory of comb production, whereby those admirably constructed cellular repositories of honey, which have been the admiration of sages and the puzzle of scientists in all ages, and which hitherto exacted the patient and persevering labor of toiling multitudes; have become a thing of pure organic development! Why, in these latter days, 'tis found that honey combs *grow*, actually grow, and not by slow accretion either, but with the rapidity of Jonah's gourd, to the voluminous amplitude of a nocturnal mushroom! How many hundreds, aye thousands, of the capacious protean hives aforesaid can thus be thoroughly furnished, on the spur of the moment, with the requisite *outfit*, while the "singing masons" are relieved from the time honored duty of building "roofs of gold!" Just think of many-celled honey-combs continually springing forth and sprouting out, *en masse* and in order due, like rank cabbages and cauliflowers, and visibly swelling into progressive enlargement and distension under the very eyes of the fascinated and delighted novice, till the "cubic contents" of the novel structure are thoroughly surcharged with superabounding "surplus!"

Then, again, look at those wonderful new Bees—the Apis miraculosa Mehringii—just imported from that famed part of modern Germany, ycleped "Schlaraffenland," bordering on the ancient Utopia! Are they not surpassingly beautiful, astonishingly prolific, indefatigably industrious, inconceivably productive, and most delightfully gentle? Ah, this new race—the *ne plus ultra* of honey gatherers, is just what was needed to cap the climax, after the invention of the protoplastic protean hive, and the discovery of the spontaneously growing honey-combs. For, lo, these admirable creatures convert the old tripartite colony into one single animated homogeneous machine, of every joint compact and working together harmoniously with every limb. No longer shall we see separate instincts, diverse impulses, and conflicting interests, interfering with each other in our hives. No, by these new bees the colony is at once transformed into one sole body corporate—like the defunct French republic, "one and inseparable"—coadunited on the "one horse" system of internal economy and external co-operation, which must infallibly produce results in bee-culture such as were never dreamed of in the rhapsodies of Homer, the theogony of Hesiod, the mythology of Ovid, or the philosophy of Virgil! Will not the land literally flow with honey, when this new miraculous insect, these unrivalled protoplastic hives, and those spontaneously growing honey-combs, are generally introduced, universally used, and come to be superabundantly plentiful, in these United States? And, oh, the price of honey, when all this comes about! How will the merchant manage to give us "quotations," when values drop down below nihility itself?

What marvellous acquisitions are these! Hives of gum elastic extensibility and of divisibility infinitesimal; Combs of growth spontaneous, extraneous, instantaneous, voluminous, and interminable; and Bees before unheard of, now unexampled, unexcelled, unapproached, and inappreciable! Is there not "a good time coming" in ancient, wide diffused and world-renowned bee-culture? And will not the "*apiarian of the future*" have a *jolly* time, and be counted among the magicians and thaumaturgists of that "new era?" By all means, let us have "An Illustration" of these new marvels, worthy of the genius of a Cruikshank or a Crowquill; and give us plenty of pots, jars, demijohns, barrels, pipes, hogsheads, tubs, tuns, and tanks, for the honey that shall flow—

"——*in omne volubilis ævum!*"

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Correspondence of the Bee Journal.

Blakely, Alabama, January 28.—Our peach trees are all in bloom. The thermometer has stood at 65° for the last ten days, during the day. Pollen in profusion. Stocks all full of brood. I greatly doubt if this precocity in the season bodes good. I fear a cold time, with frosts, will cut off supplies that would have been of more service later. It is a singular fact that bees here commence breeding later than at the north. It is said they begin there in January, here it is usually in February. But when they do begin here, they do so in good earnest, generally filling all the empty combs very rapidly.—J. M. Worden.

Littleton, N. H., February 6.,—How any one who keeps bees can do without the Bee Journal, is more than I can tell. I am acquainted with a bee-keeper who lost sixteen good stocks last winter. Last December I bought five swarms of him, and then I found out the trouble. His hives were made as tight as he could make them by cramming in paper into every entrance, without any upward ventilation whatever. The bottoms and half way up the sides of the hives as wet as they could be soaked. Two dollars for the Journal would have saved him one hundred dollars, at the lowest estimate. Is not that penny wise and pound foolish? That bee feed mentioned in the January number, by John Winfield, was just in season for me. I have a swarm of Italians in the cellar that had not one pound of honey when carried in. I had some honey and fed them with that till I read how to make the feed. I now use that. The bees like it and are doing well; some die, but I am in hopes to get them through. With many wishes for your prosperity and the success of the Bee Journal and all its readers, I am respectfully yours, Mrs. Laura Page.

New Cumberland, W. Va., February 10.—The summer of 1868, reduced the number of my colonies greatly, on account of the hot weather and dry season. In the spring of 1869, I transferred twenty-five colonies from common to frame hives, none of them having more than a quart of bees. The other portion of my colonies was in better condition.

I have now fifty-six colonies, all Italians of the nicest kind. If any bee-men come within reach of me, let them call and see how much they are ahead in the bee business.

I received from Mr. R. Wilkin, of Cadiz, Ohio, a queen bee, just imported, which I think is hard to beat.—The remainder of my colonies are from Rev. L. L. Langstroth's stock. I renewed nearly all my queens last summer, from my imported queen.—A. Chapman.

Wilton Junction, Iowa, February 12.—I have twelve stands of bees in the cellar under my house, all doing well. The cellar is not a very dry one, yet the bees did very well in it last winter. I fed them in February and March, and they throve well last summer.—John Spence.

Fredonia, N. Y., February 13.—Although bee-keeping during the last season was rather an uphill business, we hope by a continuous *Galluping*, we may come out right in the end—so keep the Bee Journal coming.—L. Sage.

Wilmington, Vt., February 13.—I am a new beginner in bee-keeping, and cannot get along without the Bee Journal. Last season was said to be the poorest known in this section for twenty years.—J. H. Kidder.

Old Mission, Iowa, February 13.—Bees did well here last season, according to the weather, which was cold during the early part of summer. They bred drones in June, and again in September, though those in large hives swarmed hardly any; but from such as were in small hives, not over 2,000 cubic inches, we got plenty of swarms.

There is a kind of spider on many of the flowers here that catches the bees by the neck, in which way many are lost. There is also a kind of long-legged wasp or hornet, that builds its nest of clay under the roofs of barns and out-houses, which catches these spiders and carries them home to its young.

Last summer there were many birds here that would sit on the fences, watching, and then dart down and snap up bees alighting on the clover blossoms. Their color is dark gray, with a little yellow spot above its bill; the under part of the body was white.—F. Schlichte.

Perrysville, Ohio, February 12.—My bees are now carrying in rye flour that I set out for them. My hives are very strong, and as full of honey as I ever had them at this season of the year.—M. A. Gladden.

Upperville, Va., February 14.—The weather has been too warm here for my bees in the cellar, and I have moved them out, as I could not keep them quiet.—H. W. White.

East Liverpool, Ohio, February 18.—Bees have done well here the past season. Though they did not swarm as much as in some previous seasons, they stored a good amount of surplus honey. I have the principal part of my surplus honey stored in glass boxes. It sells to better advantage in them than in wooden ones. Honey sold here the past summer at thirty-five cents per pound. The Bee Journal is a welcome monthly visitor. I hope it is prospering.—A. J. Fisher.

Mount Lebanon, N. Y., February 22.—I am now in my eighty-eighth year, and have been in the bee business ever since I was old enough to carry an empty hive. I thought I knew all about bees, but since your Journal came to hand, I have found I was but a novice in the business, as I have learned more by the Journal the last four years than I had in the whole of my life before. Any new beginner in the business had better pay four dollars for the Journal than not have it.—D. J. Hawkins.

Faribault, Minn., February 20.—Your much appreciated Journal continues to enliven us through the dull monotony of our long winters up here in Minnesota. I have been in the bee business for about four years, and like it very well. Still though I cannot give them the proper care, I have had very good luck; but have never been able to realize the amount of profit that many claim for their bees. I lost thirty-seven swarms in wintering last season. Perhaps that bee disease was the cause of my loss. I am wintering forty stocks this winter. So far they are doing well. I am using the Langstroth hive, the Harbison hive, and the Langstroth modified, and like the latter best. I winter my bees in my cellar and bee house. I have mostly let my bees swarm naturally, and have lost only two swarms by flight in four years. I have been troubled with the moth considerably. I have black bees with a few hybrids. I think I shall try the Italians this coming season. I was born in the State of New York, lived in Ohio about twenty years; have been in this State about sixteen years; and am about forty-five years old. I am bound to make bee-keeping pay. My wife is a No. 1 apiarian and bee-tender. Although an invalid, she devotes the greater part of her time to the care and study of our bees. Very little escapes her attentive and observant mind and eye. Enclosed find two dollars for my subscription for the Journal.—N. Travis.

Edgefield Junction, Tenn., February 21.—My bees took rye meal January 19. I had young bees flying a week ago; and pollen from bloom two weeks since. I am experimenting to obtain early drones; have wintered a few in a queenless colony. I sold one queen in January and sent one full stock to Mobile, Alabama, in perfect safety, the queen laying eggs while on her transit—there being only six dead bees found, and four of those were said to have died of old age. I have ten reserve queens in small colonies, in fine condition.—T. B. Hamlin.

Natchez, Miss., February 13.—Our winter here, thus far has been a very mild one. Temperature to day 72°, with wind from the south. For several days past the weather has been mild, and the bees have been flying out freely, returning laden with pollen. They usually commence breeding at this time, and it is kept up until the swarming period, during the second week of April. Our plum trees showed their first blossoms on the 30th of January, and are now almost in full bloom. The peach trees are also beginning to blossom freely, as are also some of the forest trees and many flowers. Our winter, however, is not yet over, as we usually have some frosts and severe weather until about the middle of March. My forty hives are in fine condition. In this climate the open air is best for wintering all stocks. I succeeded in bringing through the severest of our winter weather, in the open air, but under shelter, about a pint of black bees and a queen, in an observing hive, containing a single "American" frame, with two glass sides, and no other protection than a lining of cloth between the glass and the shutters. They had dwindled down very much until the 26th of January, when, having fed them with honey, it being a mild day, the hybrids of some hives in the yard made an attack on them and carried off their stores. The night following being frosty, they were discovered in the morning dead, and without a particle of honey in the comb. Had they not been deprived of their feed, I do not doubt they would have come through safely, though I cannot believe the queen would have remained fertile.

Our climate here is a changeable one. To illustrate, on the 16th of January, thermometer 74°, 17th 54°, 19th 46°, 20th 43°, 21st 58°, in the morning, and 68° at noon; and so it usually varies—at least after the first of January, until spring fairly sets in, about the middle of March.

I have observed that when their temperature is 46° F. a few bees will venture out; at 50° they will fly more numerously; while at 60° they fly briskly if pollen is to be had.

Your valuable Journal reaches me regularly, and I alays peruse its pages with much interest.—J. R. Bledsoe.

Koshkonong, Wis., February 25.—I am trying the experiment of wintering my bees in a dark cellar. I carried them in at the commencement of cold weather. On the 16th of November raised one side of the caps on blocks, and kept the temperature at about 35° F. After a short trial I thought best to remove the caps entirely from the hives. After a further trial, I reduced the temperature of the cellar to from 28° to 30°, in which condition the bees became sufficiently quiet, and so remained till the weather moderated in February, when they became somewhat noisy. The 7th proved to be a very fine day, and towards noon the thermometer stood at between 50° and 60°. I carried out my bees, placed them on their summer stands, and removed the caps, and as a consequence the bees took a general fly, and very few were lost.

I have since kept them quietly in the cellar, with two inches of newspaper spread over the frames, but drawn a little to one side, so as to be sure to give ventilation. Temperature still at from 28° to 30°.

I like the plan of throwing some sort of wire arrangement over the frames, to keep the bees in and the mice out; and I find no difficulty in making room under the wire for dishes containing feed or water. I find these dishes of water to get empty every few days, and as I cannot ascribe the disappearance of the water to leakage, and am not willing to ascribe the whole of it to evaporation, I am forced to the conclusion that the bees consume most of it.

Of course I cannot tell as yet how I shall succeed with bees, but I act on the principle of the ancient motto—"*Perseverantia vincit omnia.*"—D. P. Lane.

Orchard, Iowa, March 8.—The readers of the American Bee Journal will be pleased to learn that within eighteen miles of Nashville, Tennessee, bees commenced carrying in meal on the 19th of January, and on the 18th of February, the silverleafed poplar, the willow, the elm, the maple, and several other trees were in bloom, and a few more days would bring out the peach and plum blossoms. But away down in Alabama, bees were swarming in January, according to one correspondent. You will see this beats our time altogether. Yet in ordinary seasons, we get as much honey, per swarm, as they do there—that is, as near as I am able to make out.—E. Gallup.

Shreve, Ohio, March 11.—I suppose you have never heard anything on bee-culture from this part of the country. I started in the business four years ago, with the Italian bee and movable frame hive, among a set of old rustic bee-keepers, who claimed it was all a humbug; that the Italian bee was no better than the black; and that the movable frame was just a worthless patent right, to make money of. For my part, I intended to test the matter, and procured a swarm of pure Italians from Mr. A. Gray, of Riley, Ohio. They have done finely, and I have proved to the people here, that it is a profitable business. I succeeded in getting my neighbors, within two miles, to change their bees; so that I do not expect to be troubled with black drones, next season, in getting my queens mated. I have fifty stocks all in good condition, and am making one hundred and fifty movable frame hives this winter. I intend to put my whole time into the business. Last season here was just a medium year for honey. It was not as good as we have had; yet I hope the next will be better. I will send you a photograph of my apiary this summer. I enclose two dollars for my subscription to the Journal. I like it very much. So, hurrah for the American Bee Journal and the Italian bee.—G. W. Stinebring.

MONMOUTH, ILLS., March 9.—Friend Adair takes some of us to task for not reporting the fractional pounds of honey. If he was out here, I could show him a string almost a yard long, on the wall of the kitchen, where I marked the weight of each box. Few boxes weighed exact pounds; most of them contain fractions. Some day when I get leisure, I will copy it and send it to him. Mine really averaged 110½ pounds, instead of 110, as reported; and had I included three frames taken out of main hive and empty frames put in their place and which were filled, the average would have been larger. Last year, in this section, was the best honey season I ever saw or expect to see soon again. The season was wet throughout, from June to October.—T. G. MCGAW.

[For the American Bee Journal.]

Dwarfed Queens.

I do not believe that a dwarf queen is *always* the result of being reared in a small cell, from the fact that they do not always correspond in size, to the cell they hatch from. Having watched hundreds with this very point in view, I am compelled to admit that I cannot always predict the size the queen is to be, by the size of the cell she is reared in. I have known a queen cell of the smallest size, so small that it might have been mistaken for a worker cell, had it not been connected with others that were made as usual, to produce a large size queen. On the other hand, I have known a queen hatched from a cell of the largest size, to be even smaller than a worker. These facts show that we must look for other causes for diminutive size, in some instances at least.

I will admit that a cell is sometimes too small for the bee that is raised in it, like the drone in the worker cell. But it is not often that a queen or a worker is thus affected. A full sized worker is reared in a cell nearly half filled with cocoons left by previous occupants. The idea that a bee never increases in size, after leaving the cell, will have to be abandoned.

Whenever the bees find it necessary to rear queens from material deposited in worker cells, the small size of such cell is thought to have effect on the size of the queen. Notwithstanding the egg may be laid in a worker cell, too small for a queen, it does not follow that she must be developed there. When the bees wish to rear a queen thus, they immediately enlarge the outer end, and if the comb is new, first bite away and reduce the length, and fill the original cell with chyme, crowding the larva queen into the enlarged part, where she literally floats.

It cannot be made to appear that any lack of food can make the difference. I have the authority of the BEE JOURNAL for saying that "up to the sixth day after emerging from the egg, all larvæ, whether workers, or drones, or those designed for queens, receive precisely the same kind and quality of food, namely *chyme*, as prepared by partial digestion in the stomachs of the nursing workers. To the queen larvæ, however, this is administered in larger quantity—so plentifully, indeed, and apparently so greatly in excess of its immediate needs, that the nascent insect literally swims in it." If natural and artificially bred queens—I object to the word *artificial* here—are fed precisely alike, "up to the sixth day," it can be shown that there is an excess in quantity, by what is left in the cell after the queen has matured. We must look still further. When bees are deprived of their queen, and they can choose larvæ to rear from, it would seem reasonable that they would take such as could be matured at the earliest possible moment. The uniformity with which they mature a queen in just a few hours short of ten days, in hundreds of instances, would look as if that was the shortest time possible. I never yet had any mature in less time. I think there must be some mistake about their hatching in seven or eight days.

And now, if the food is the same in all cases, and there is no want of room to cramp the chrysalis, what is it makes the difference? Or is there no difference? I do not care to take the position that artificial queens are *usually* smaller than others. One reason why it is thought to be so, I think will be found in the fact we see very many more of such, than of the naturally reared ones, and forget to compare the proportion. Notwithstanding the cells are *generally* larger in a swarming hive, some small sized queens will be hatched then.

Can we not have some other solution of why we have *any* small ones? M. QUINBY.
St. Johnsville, N. Y.

[For the American Bee Journal.]

Selecting Stock.

I receive a great many inquiries of this character —"I have purchased two, five, or more swarms" (as the case may be), "of a neighbor, in box or gum hives, and I can have my choice out of the lot" (which is more or less in number); "please inform me how to make the selection so that I get good swarms."—In answer to these inquiries, I will give you an actual transaction, without mentioning names.

"Come, Gallup, jump into my sled and ride up to Mrs. R.'s, and help me select a couple of swarms of bees." In this case, the woman owned the bees, as the man could have no luck. I selected two swarms; but my friend thought I had not made a good selection. So I persuaded him to take one of my selection, and one of his own. I selected one that had the comb all built in regular order and nearly all worker comb, well crowded with bees, with honey enough and not too much, and had cast a swarm the previous season, for in that case they had a young prolific queen. My friend selected a very heavy hive, with but a medium swarm of bees. Only a small proportion of the comb was worker comb, and all was very irregularly built. This was in the latter part of February, and in box-hive times. I explained that my selection would send out three swarms to his selection sending out one; and that he was now purchasing for the bees and not for the honey. The result was, my selection sent out four swarms early next spring, and all did well, filling their hives; while his selection sent out a small swarm late in the season, which did not fill its hive, and died over winter. The fact is, it had only an old unprolific queen.

So much for selecting swarms. Now for transferring. Select such stocks as have good straight comb, and bees enough. Transfer them early in the spring, and save honey for your own use, or for feeding other swarms. But select good straight combs for transferring, and a large proportion should be worker combs; and if the bees are numerous, you have in nearly every case got a prolific queen, without asking whether they cast a swarm the previous season. People that have or keep bees in old box-hives for sale, as a general rule do not read the BEE JOURNAL, so they will not be apt to know the difference between a good stock swarm and a bad one. Now about the price. The seller will generally make no distinction; all are alike to him. But I have seen swarms sold in the fall for ten dollars, that were scarcely worth taking as a gift; and I have seen swarms sold at five dollars that were better worth twenty dollars than others would be as a gift. Understand, that at the present day all swarms can be made extra ones, if taken in season. With the movable comb-hive, if the queen is not good, we can supply another; and if they lack honey, they can be supplied with that also. In fact, everything, except the season, is under our control. Some will be apt to tell you that if you have a poor swarm, it must remain a poor one; but you must not believe any such nonsense.

E. GALLUP.

Orchard, Iowa.

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[For the American Bee Journal.]

Raising Early Queens.

MR. EDITOR:—About those patented boxes and processes for rearing and fertilizing young Italian queens, I have nothing to say. But I do say that I can raise queens for one dollar apiece, if taken as soon as fertile.

In raising young queens, I agree with others as to the starting and building of queen cells. I would use no brood or larvæ older than one day; but the trouble comes after they are hatched; especially, if raised early—and that is the time of which I speak or write.

After experimenting for years, I found that the main loss was from regicidal attacks—(see Mr. Woodbury's views in AMERICAN BEE JOURNAL, Vol. 2, page 157); and that these attacks were owing to a scarcity of honey in the fields. Consequently the guards are on hand in full force, and will seize the returning queen, if she has been scented with drones from other hives than her own, and she will often be killed or crippled.

Huber thought there were two or more classes among workers, and that their occupations remained the same always. Other and later writers maintain that it is chiefly owing to their age, and that this makes the difference in their occupations. My own observations lead me to concur in this latter opinion, and to believe that I could apply this knowledge to queen raising, and thereby help me out of the difficulties I experienced, or some of them.

I think there are three classes of workers in the hive. First, infants under ten days old. These will be well received by any colony to which they are given. The second class are those from the tenth to the twentieth days of their lives; and these are the real sovereigns of the hive. These are the chaps that kill my young queens, if honey is scarce and they are busy with other cares. The workers over twenty days old are producers, and are not apt to enclose a young queen on her return from her wedding tour. I therefore use bees over three weeks old in my nucleus hives, and can get perhaps a dozen queens fertilized in each hive prepared in this way: Move a strong stock two or three rods away; place your nucleus on its stand; give this nucleus a very small piece of brood comb with queen cell attached that will hatch in two or three days, and also combs with honey in them. After the queen is hatched, I take away this brood comb. If I wish to have more than one fertilized, the extra ones must be caged in the hive until the reigning one is removed, and for some hours after.

I commenced bee-keeping in 1847, being then twenty-five years old. At present, I make it a rule to winter fifty stocks. I am a farmer, and was born in the State of New York.

JOHN L. DAVIS.

Delhi, Mich., Feb. 22, 1870.

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[For the American Bee Journal.]

Ventilating Button for Caps of Hives.

I think experience teaches that the caps of hives should be sufficiently ventilated to relieve them from a confined and melting heat, when the bees are storing honey in them in hot weather, and to carry off all dampness in cold weather; while at some other times, little or no ventilation is needed. It is necessary, therefore, to have some method by which ventilation can be easily regulated. In the absence of a better plan, the following will be simple and effectual.

For ventilators bore four holes of one inch, each, in diameter in the sides of the cap; cover these holes or ventilators on the inner side with wire-cloth; and on the outside put on the ventilating button, made as follows: Take a strip of board, three inches long, one inch and a half wide, and five-sixteenths of an inch thick; make the ends oval, and cut away half the thickness of the strip or button clear across its width, and to the length of one inch and a quarter. In the centre of the button bore a hole to receive a light one inch screw, to hold it in place and around which it revolves. To mount it, turn the halved side of the button towards the cap, and lay it horizontally and centrally below the ventilator, so that the upper edge of the former will come flush with the lower edge of the latter; drive in your screw, which should be very firm in the cap and somewhat loose in the button. Now turn up the halved end of the button over the ventilator, which will then be somewhat darkened, yet admit air freely, and be measurably protected against driving storms. With the other end of the button the air can be entirely shut off or regulated at will.

I have for many years used the device above described on some of my hives, with entire satisfaction.

HENRY CRIST.

Lake P. O., Ohio.

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Introducing Queen Bees.

Translated for the American Bee Journal.

At the late general convention of German bee-keepers at Nuremberg, the sixth question proposed for discussion was—"What is the safest and best method of introducing a stranger queen?"

The debate was opened by Major VON HRUSCHKA, the inventor of the honey extracting machine. He said:—"The speediest, simplest and safest process of introducing a stranger queen, whether fertilized or not, or a queen cell from another hive, into a queenless colony, is the following: The implement which plays the principal part in the operation, is one used by ladies in perfuming their dresses, called a '*rafraichisseur*' by the French, and which can be procured from any perfumer or druggist. The purpose is to produce a light stream of moist vapor or spray, by blowing through the instrument when properly charged, so that it would moisten but not wet a hand held in it. The charge used is a mixture of water and essence of peppermint in the proportion of a thimbleful of the latter to a gill of the former. This mixture must be well shaken when to be used, and should not be so strong as to produce any great excitement among the bees when they are exposed to it.

When a stranger queen is to be introduced in a colony in a movable comb hive, comb after comb should be gently lifted out till the native queen is found and removed. Then the combs still remaining in the hive, the sides and ends of the hive, and the bees (the hive having been closed) are to be gently but thoroughly fumigated or perfumed by blowing the vapor of the mixture through the entrance, and through a small opening made in the rear of the hive, repeating the fumigation in about half a minute, to set the bees in gentle commotion, so that each individual may be duly perfumed. The combs and bees that were lifted out are next to be treated in like manner, as each comb is replaced in the hive after repeating the vaporing operation two or three times. Immediately thereupon the queen to be introduced, whether fertilized or not, must be subjected to similar fumigation and perfuming, repeating it two or three times at intervals of half a minute. She is then to be set free on one of the brood combs, and the hive again closed.

This is the whole process; it can be performed n less time than is required to describe it, and out of seventy or eighty queens thus introduced by me, not one instance of failure occurred. Except in the case of some very precious queen, or when the colony is known to contain a fertile worker, I never deem any subsequent examination necessary. Where a fertile worker is known or is suspected to be present, I repeat the perfuming fumigation again in two or three hours, or on the following morning, blowing in the vapor through the entrance and the rear of the hive.

If after this process a queen should be destroyed, it will be found that the colony, though supposed to be queenless, yet contained a queen which escaped detection and removal; or that the mixture of peppermint and water was not properly prepared or sufficiently shaken, and was consequently too weak for the purpose intended. If the mixture be too strong the bees will become highly excited, leaving the interior of the hive and clustering on the outside above the entrance. But in such case I have never observed any ill results, the commotion soon subsiding. The bees return to the interior, and next morning all will be found in order, the queen having been accepted.

The quantity of the mixture to be used on each occasion is from 1½ to 3 tablespoonfuls, according to the size of the colony.

For greater safety, till some skill in preparing the mixture and performing the operation has been attained, preliminary experiments may be made with supernumerary, worthless or common queens.

From box or straw hives, with fixed combs, a swarm is to be drummed out, and the native queen removed; then the combs and the interior of the hive must be well fumigated with the perfumed vapor or spray, after which the expelled bees are likewise so treated, and finally the new queen, perfumed in like manner, placed among and allowed to pass into the hive with the returning bees.

If, when two or more colonies are to be

united in the fall, or at any other time, some of the bees prove to be quarrelsome or pugnacious, they will speedily become pacified and reconciled on being repeatedly perfumed as described. But resort to this mixture is not advisable when a colony is being robbed."

Mr. Futterer remarked.— "A somewhat similar process, but using chloroform, and thus stupefying the bees, has been recommended in the Bienenzeitung. I have tried this ten or twelve times, and have lost some very fine queens. The use of grated nutmeg has also been proposed. I have tried it and succeeded three times out of four, but the mishap, though only one in four, may involve the loss of a valuable queen."

Mr. Leschetzky said: "I have charge of an eight hive pavilion (the joint property of sixteen members of our association) which is used exclusively for rearing queens, and I thus had many opportunities for observation. I have reared more than one hundred queens in the pavilion, and employed various methods of introducing them in queenless colonies, but none ever proved to be entirely satisfactory, all being attended with difficulties, risks and delay. I was always ready to sacrifice a queen in my efforts to discover or devise some simple and sure process. On reflection I conceived that after removing the native queen the intended successor would be readily accepted if I operated in accordance with the natural habits of the bee. With this view I caught and removed the old queen in the morning, and attached the cage containing the strange queen to one of the *brood combs*, and liberated her *in the evening of the same day*. Next morning I examined the hive, and found the queen safe and laying eggs. Again, I removed the native queen in the evening, placed her intended successor caged on a brood comb purposely set in the rear adjoining the movable door of the Dzierzon hive, and liberated her in the evening of the following day. She was at once accepted. I repeated this process frequently until I was satisfied that it had been fully tested, and with proper attention was always successful. Only once was a queen killed for me, and then the mishap was attributable to my mistake in attaching the cage containing the offered queen to an empty comb instead of a brood comb.

I am thoroughly convinced that the most dangerous foes an introduced queen has to encounter are the young bees found on the brood combs, and our first endeavor must be to make these familiar with the offered stranger, so as to induce them to accept her freely. Hence I use the precaution now to place a brood comb at the rear end of the hive, next the door, and to it I attach the cage containing the queen I would introduce. I can then promptly liberate her at the proper time, without producing excitement among the bees.

By this process, now used successfully more than fifty times, the bees do not become conscious of queenlessness, and never begin to build queen cells, and as the new queen is liberated *in the evening*, when bees are known to be more peacefully disposed than at any other times, it is evident that the process has many advantages over any hitherto employed, especially as brooding is thus interrupted only for one day."

Mr. Kneipp observed:—"When I wish to change queens, I catch the old or native queen, cage her and let her remain in the hive that day. The cage thus becomes imbued with the scent or odor of the colony. In the evening, at dusk, I remove this queen and substitute for her the one I intend shall be her successor, using the same cage and besmearing it on every side with *honey taken from the same hive*, and immediately reinserting it. If the queen thus given is a very precious one, and I desire to be absolutely sure that she will be accepted, I puff segar smoke gently in the entrance of the hive at intervals of thirty minutes, for about two hours. In from twenty-four to thirty-six hours, I liberate her, using segar smoke again as before. Thus proceeding I have invariably been eminently successful.

When I desire to unite the bees of two or three colonies, I drive out or shake off the bees successively into a large glazed earthen pot, and introduce the selected queen directly among them, unconfined. I then thoroughly mix or shake together the whole mass, two or three times at short intervals, and then, to prevent the generation of excessive heat, I transfer them immediately to the hive prepared for them.

Since I employ this method I have never had bees or queens injured or killed, as the bees become exceedingly alarmed and are apparently glad to escape with life."

Mr. Dzierzon said:—"It frequently happens, after the removal of the old queen, that her successor, when introduced, is apparently well received and accepted by the bees, but is subsequently, a week or ten days later, destroyed by them. It is, of course, desirable that a valuable queen should not incur such risks, and if we would be sure of her thorough acceptance she should be given to a second swarm, from which a still virgin queen has just been removed, or to an artificial colony having queen cells nearly mature. The workers of such colonies have been for some time queenless and are ready to accept and permanently retain any fertile queen that may be offered to them. Care must, however, be taken to remove every young queen such colony may contain, or the new queen might still be lost, and though queen cells will commonly be destroyed by the workers on the acceptance of a queen, it is safer to remove them immediately, especially if the embryo queen be nearly mature, so that the introduced queen may not incur the risk of being killed by an emerging one."

Mr. Reitenspietz remarked:— "When I wish to introduce a valuable Italian queen in a healthy, populous black colony, whether in spring, summer or fall, or even in unfavorable weather, I proceed in the following manner:

"At noon, or in the afternoon, I capture the native queen, confine her in a cage and place this in or on a *brood comb*. Having replaced the combs taken out when searching for her, I close the hive and leave it in this condition twenty-four hours. Then, that is at about the same hour on the following day, I take out the cage, remove the old queen, and substitute the Italian queen for her in the same cage, which I set aside for a while till the queen becomes quiet and resigned. I then besmear it on all sides with pure nice honey, and replace it in the same position it occupied before in the hive. Now closing the hive I leave it in this condition several days, four days being best, according to my experience. Then, opening the hive again, I destroy all the queen cells that may have been started, take out the cage, remove the slide and cover the opening with a thin plate of wax, to keep the queen confined. Replacing the cage in its former position and closing the hive, let the bees liberate the queen at their leisure. The cage may be taken away after she has left it. I will guarantee that by this method queens, whether fertilized or not, may always be safely introduced."

Mr. Masbaum said :—"I have this year taken bees from several colonies, shaken them together thoroughly, and immediately given them the queen I desired to introduce, and she was always readily accepted.

A few weeks ago, by way of experiment, I drove out a swarm from a straw hive, and after securing the old queen and returning her to the parent stock, I gave a new queen to the swarm. Although these bees had been accustomed to the presence of a fertile queen of the previous year, and the one given to them was a young one only fertilized a few days before, she was kindly received and accepted. I must state, however, that I let the driven swarm and the given queen remain together, shut up in an empty hive, fully twenty-four hours before I gave them combs. Had combs been given to them immediately, the result might not have been so favorable."

Mr. Klipstein stated that "a well tested and sure mode of introducing queen bees is as follows : After the old queen has been removed introduce her intended successor the same evening, merely besmearing her with honey, and placing her where the larger mass of the bees is congregated. The stranger queen may also be besmeared with honey taken from the hive in which she is to be introduced, and set at large on one of the *brood combs.*

Removing the old queen in the morning and introducing her successor in the evening, is probably advantageous simply because the bees will retain their consciousness of queenlessness perfectly till evening, without yet adopting measures to supply their want. Mr. Dummer, of Homberg, in the Bavarian Palatinate, communicated this method to me, assuring me that he had repeatedly introduced queens, whether fertile or virgin in this manner with the most gratifying results."

When practical men are just commencing the study of a science which should direct their daily labors, they must not be treated as patient and trained students eager to explore the whole Temple of Nature ; but rather like cautious and somewhat unwilling candidates, who must be lured into its outer vestibules, by wisdom conveyed in pleasant and familiar words.

What are the Essential Conditions of Early Swarming?

Translated for the American Bee Journal.

This was the seventh question for discussion, on the programme of the Sixteenth General Convention of German Bee-keepers at Nuremberg, September, 1869.

Dr. Zirvansky.—I am a decided advocate of simplification, and constantly endeavor to introduce it wherever practicable. Hence I desire to apply it to the subject before us, which would then be made more easily intelligible. As it stands I conceive the proper answer is—"*There is only one essential condition of early swarming,*" and that is to be found not in the bee community but in the bee-keeper himself. It consists in *an accurate and thorough knowledge of the nature of the bee.* If the bee-keeper has such knowledge, he will know also the wants of his bees, and, knowing these, he will be careful to have them fully supplied at the right time, and will thus always have the colonies in his apiary duly prepared for early swarming.

By virtue of his knowledge of the nature of the bee, the bee-keeper is aware that he can expect to have early swarms *only* from populous colonies ; and he will consequently take care to winter only strong stocks. But in order to do this, he will, *first,* select strong stocks in the fall ; *secondly,* he will be careful that they shall remain strong during the winter ; and *thirdly,* will manage that by early breeding the population shall increase rapidly in the spring.

Let me now recapitulate in order.

First. If the colonies intended for wintering are to be strong in the fall, they must have *healthy, prolific,* and *still young* queens. The grand secret for effecting this is, *never to permit the queens in your apiary to approach the period of superannuation,* but to renew them frequently. When doing this, furthermore *select queens bred not earlier than in July or August.* Such queens will continue laying late in the fall, resume it vigorously at the close of winter, and have plenty of brood early in the spring. In every case the queen must always be regarded as the most important member of the family, as it depends on her altogether whether the colony is in any respect to be praised or not.

In every apiary there will always be found some stocks weaker than others, at the close of the season ; and it becomes important to equalize the whole, if practicable. This is done by transferring combs of brood from the stronger stocks to the weaker. Where the number requiring to be thus reinforced is not large, so that they can quickly be adequately supplied, the result is always satisfactory. But if the weak colonies happen to be disproportionately numerous, the attempt thus to equalize them all would unduly weaken the stronger, and hence be disadvantageous. In such case, the proper course is to break up some of those weak stocks, or unite several.

Secondly. If the colonies are to remain strong during the winter, they must in addition to having young prolific queenes, be supplied with sufficient stores for their support.

It has been a subject of frequent debate, what quantity of stores, consisting chiefly of honey gathered from spring blosoms, is required to carry a colony prosperously through the winter? And the striking differences in the quantity named by experienced bee-keepers, arise from the fact that the disputants have not agreed upon a definite period for which supplies are to be estimated. Some reckon from the time pasturage fails in the fall to its revival in the spring—a period of from four to six months. Others regard only the time during which the bees do not fly—a period usually of not more than six or eight weeks. Almost every fall we find bees of some colonies occasionally flying out, long after pasturage as a source of supply has failed. In the comparatively brief term during which they remain altogether secluded in their hives, and before brooding commences, even the strongest colony consumes very little honey—hardly *a pound* in *a month*. The requisite supply for so short a period is consequently not worth mentioning. In estimating for the winter's supply, the first mentioned term is to be regarded as the normal period, and with reference thereto we may very properly say that the *bee winter* begins at the time *when the colony commences drawing on its hoarded stores*, and continues till such time in the spring *when the daily gathering of honey begins to exceed the daily consumption*, for then only may a colony depending exclusively on its own resources be regarded as being safe. To be provisioned for this period, every colony should have *at least* twenty pounds of honey. Taking long experience as my guide, I have come to the conclusion that it is not sufficient to allot to a colony just such an amount of stores as will barely though surely suffice to carry it through till spring opens. *It must have somewhat more than this*, so that it shall not only feel comfortable, but likewise encouragingly *rich;* for if the bees become conscious that their supplies are scant, they will use every drop of honey grudgingly from an instinctive dread of want, and brooding will be accordingly restricted or deferred.

If in consequence of a general failure of pasturage in any year, we are constrained to resort to substitutes for honey to provision our bees in the fall, good brown sugar candy is to be preferred. Very liquid or much diluted food must be carefully rejected as injurious.

For successful wintering perfect, quiet, and protection from driving winds and extremes of cold, must be provided for, and frequent temptation to fly guarded against. Placing the bees during winter in a dark cool chamber or cellar, or in some special repository, is probably the best mode of securing these ends in northern countries.

Thirdly. Strong colonies, having prolific queens, and well supplied with stores, will commence brooding early; and such, if other circumstances be favorable, will early be in a condition to swarm.

As regards the size and form of hives, practical bee-keepers are, I presume, pretty much agreed. Bees in a small hive *may* swarm earlier than those in a large one, and it is a fact founded on physical principles that a colony in an upright or standard hive *will* swarm earlier than one in a horizontal or lager hive. Again, certain local or provincial varieties of the bee are popularly regarded as naturally more prone to early and frequent swarming than others—a prejudice of of which dealers are apt to avail themselves in recommending their stock. The heath bee of Luneburg is usually considered as being at the head of this list; then follows the Carniolian bee; whilst the Italian is thought to have this propensity least developed. There may be some truth in these popular notions, but I deem it of little importance—believing that what there is of it is based on local causes, the influence of prevailing weather, peculiarities of climate or pasturage, or customary management, and hence as certain to prove transitory and variable. I have in my apiary the pure Italians, the common black bees hybrids, of these, heath bees from Luneburg, Carniolian bees, and bees from Lower Austria; and the alleged differences between them, in swarming propensity, has altogether disappeared, or rather it has in my case become almost entirely reversed, for now among all my bees, the Italians swarm earliest. Still, I have cultivated the others too short a time yet, to speak very positively about this matter, though I feel assured that in the heath and the Carniolian bee this disposition has considerably diminished, and probably in three or four years more there will be no difference perceptible. Hence I am disposed to conclude that, with proper management, and with due reference to weather, climate, exposure, and pasturage, the beekeeper has swarming completely under control. If he knows the nature and habits of bees and attends duly and seasonably to their wants, he will have strong colonies in the spring, because he will winter only such as have young prolific queens, with ample supplies, in good substantial hives, well protected from extremes of cold and great variations of temperature, and in a position where they are least liable to disturbance; and such colonies will produce early and good swarms.

DZIERZON.—The chief requisite for early swarming is suitably, warm, humid weather. That bees in some years swarm early and frequently, and in other years late or seldom, is owing principally to the state of the weather. Warm and moist weather is more conducive to early brooding, and thus promotes early swarming. If nature herself do not present these conditions, the bee-keeper should endeavor to supply them in part at least. To this end feeding with diluted honey is very serviceable, as it leads to the production of brood, and thus fosters swarming. It is also advantageous to keep a constant supply of soft water near the apiary and accessible to the bees, that they may readily procure what they need; because if they are in want of water, brooding will be checked, however much honey there may be in the hive—and it is important that brooding commence early *and proceed uninteruptedly*. A temporary cessation of it, after it has once commenced in the spring, is always injurious, and the utmost care should be used to prevent it.

MASBAUM.—In general early swarming is undoubtedly desirable; and the bee-keeper can contribute materially to having his colonies in proper condition for such results. But though a colony is populous, and apparently in all respects in a condition to send out a swarm, we are nevertheless at times doomed to wait for one in vain. In such case, seasonable interference is advisable. If the colony is in a box or straw hive, drive out a swarm; if it is in a movable frame hive, make an artificial colony.

Dr. Preuss.—In my neighborhood,. where straw hives are almost exclusively used, I have had opportunity to make observations on the requisite conditions for swarming—early swarming particularly—some of which I desire to communicate.

In some colonies the swarming propensity is regarded as an inherited and transmissible taint. They distinguish themselves, year after year, by producing swarms early. This is easily explained. An early swarm fills its hive with the finest worker comb and stores up an abundance of honey and pollen. Next spring it has plenty of supplies, and no vacancies in its hive to be filled with comb newly built at the cost of time and honey. An early swarm again is the natural consequence; and so on successively.

Secondly.—Early swarming is very much dependant on the character and completeness of the comb which the hive contains. A disproportion of drone comb retards or prevents it; whereas an abundance of worker comb fosters and secures it. Hence, cutting out worker comb in straw or box hives, in the spring, is injurious; none except mouldy or damaged combs should be removed.

Hives should be protected from prevailing winds. Colonies well sheltered will make an astonishing progress beyond such as are exposed to a current of wind, especially if it come from the north and northeast.

For early swarming a southern exposure is preferable. I had occasion last summer to observe two stands, one of which had a southern exposure without shelter from the rays of the sun; the other had an eastern exposure, and was so placed that after twelve o'clock, noon, the sun did not shine on any of the hives. The colonies in the former gave two swarms each, before any issued from those in the latter, though they were equally populous. In changeable weather it is highly important that after the young queen is mature, the old queen should have an immediate opportunity to depart with a swarm. She should be able to avail herself of the first hour of sunshine, to leave; for if this be missed and cold or cloudy weather follow, one of the queens—usually the young one—will be killed, and all the supernumerary queen cells destroyed. Then we shall either have no swarm, or it will come two weeks later.

To promote early swarming, the material of which the hive is made, should be readily permeable by solar heat. For this reason straw is, and probably will ever be, the best material that can be employed.

A constant and regular supply of water, conveniently placed, is of great importance. As soon as brooding commences bees need much water, and they should be supplied with it in shallow dishes or troughs set near the apiary, unless that is situated near a spring, brook, or stream. I have known bee-keepers to turn up their straw hives when the weather grew warm in the spring, and pour in a pint of pure water between the combs, and this with decidedly favorable results. Water also serves to dissolve candied honey, and when thus supplied, enables the bees to use such honey on days when they could not leave the hive without risk of being lost.

These observations show why movable frame hives are less conducive to swarming than straw hives with fixed combs. In the first place, movable frame hives are rarely so compactly filled with combs, as the others, in which these are more closely built; and secondly, the solar heat does not penetrate them as readily, nor is it retained as long, as in the case of straw hives.

Those who use straw or box hives, and whose bees do not swarm before the 20th of June at latest should resort to driving or drumming out a swarm. This operation can be performed in thirty minutes, and obviates further delay. The driven swarm is to be hived, and set in the place of the parent stock, which now, nearly deprived of mature bees, but well supplied with honey and brood in all stages, should be set in the place of some strong colony now removed to a new location in the apiary. The latter, retaining its queen, young bees, and brood, will in a few days be as populous as ever; and may then again be used for a similar purpose—if the first driving was not too long delayed. We shall thus have three colonies from two—an increase of fifty per cent., with a certainty that all three will thrive.

Bees should have a liberal allowance of fresh air during all extremely hot weather; and if the stocks are strong, the honey boards and the blocks may be entirely removed.

[For the American Bee Journal.]

Michigan Bee-keepers' Convention.

The Michigan Bee-keepers' Association convened at Lansing, March 23d; President Moon in the Chair.

Mr. Rood read a paper on spring and winter management.* A paper from Dr. A. V. Conklin, on the same subject, contained essentially the same recommendations.

A paper from E. Gallup, Orchard, Iowa, on bee maladies, suggested that foulbrood and dysentery were only products of ignorance and carelessness. He thought proper feeding and ventilation would remove these dreaded destroyers. He had known nothing of them.

Mr. Rood said it was evident friend Gallup knew nothing of these diseases. He knew foulbrood to be a terrible scourge, and believed it contagious; and that it occurred under the most careful management. All afflicted colonies should be buried low and deep.

The Italian bee was then considered in a paper by J. M. Marvin, of St. Charles, Ills. He gave the following points of superiority: 1st. Its excellent temper. 2d. Its beauty, and the consequent ease of detecting the queen. 3d. As quicker and better workers. 4th. Greater hardiness. 5th.

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* Will be inserted hereafter.

Greater prolificness. 6th. Tenacity in adhering to the brood. 7th. The queen's habit of adhering to the comb. 8th. Superior success in resisting the miller and moth-worm. 9th. Greater endurance in times of scarcity. 10th. Adherence to the comb in artificial swarming.

Summer management was then discussed, but no new points were brought out.

Evening Session.

President Moon delivered a very able address. He brought out in vivid colors the inducements to apiculture; showed the need of concerted action and congressional aid; and closed with an earnest appeal for a NATIONAL BEE-KEEPERS' CONVENTION. Several members warmly advocated this project. Several letters from prominent bee-keepers, also urging a call at some central position, were then read. After considerable discussion, the following resolution with the preamble, was unanimously adopted.

Whereas, the subject of a National Bee-keepers' Association was much talked of at our last gathering;

And whereas, in our judgment, the time for the same is fully come; therefore

Resolved, That we issue a call for a National Bee-keepers' Association, to be held at the city of Indianapolis, Indiana, on the 10th and 11th of August next.

THURSDAY, *March 24th.*

The Melextractor was commended to favor by Mr. Rood, of Wayne, Mich., and Mr. Hart, of Wisconsin, as being second only in importance to movable frames, as an aid to the apiarian.

Alsike clover was highly recommended by several gentlemen of experience, not only for bee pasturage, but also as a forage plant.

Mr. Rood would raise queens in nuclei, so as to always have some on hand.

Mr. Hart said queens were apt to chill, and thus be reduced in size, if not destroyed. In his hives he had them above the frames, separated by a wire gauze; thus they were never chilled, and were much larger.

Mr. Mitchell described the queen-breeding cage of Dr. Davis, stating that it worked admirably, and recommended its use to all.

The different methods of artificial swarming were then given. All of which may be found in Langstroth on "the Hive and Honey bee;" a copy of which every apiarian should own.

Mr. Rood read a paper on transferring.*

The Secretary then read a paper on the subject of inciting an increased interest in apiculture. He referred to the great encouragement which increased information yielded to the apiarian; gave some examples of the great profit as related to labor and expenses of bee-culture; showed how it incited its votaries to higher mental improvement; and proved it to be one of the greatest stimulants to a higher moral culture, and in view of the good which society would reap from an increased of interest in apiculture, offered the following resolutions, which were adopted:

1st. *Resolved*, That, in the present state of our finances, we deem the publication of a work on apiculture for gratuitous distribution, or the dissemination of works already written, at the expense of this Association, ill advised.

2d. *Resolved*, That recognizing the value of Adair's Annals of Bee-culture, the American Bee-Journal, and Illustrated Bee Journal, we do all in our power to promote the circulation of the same.

3d. *Resolved*, That, as individuals, we will do all in our power, in our respective communities, to increase the interest in bee-culture.

4th. *Resolved*, That we, as individuals and as an Association, will encourage popular lectures upon this most interesting and profitable vocation.

A resolution was passed instructing the Secretary to forward the proceedings of the meetings to the bee journals for publication.

[For the American Bee Journal.]

Introducing Queen Bees.

MR. EDITOR:—Last season I introduced four hundred and five (405) queens, into all sorts of hives in the country. Of this number sixty were killed in the introduction and six were killed after they commenced laying. Of the sixty-six colonies that killed their queens, four failed to supply themselves with another perfect one. One colony killed the second queen given to it. Much the fewest number of losses occurred about swarming time.

My plan of introduction was to kill the native queen, and immediately introduce the Italian one, confining her to her cage with a plug of honey comb, which the bees could eat out in a day or two, thus liberating her.

I would like to hear from others who have introduced hundreds in a season, what proportion were lost, and what was the plan of introduction.

I will have to put in from eight hundred to one thousand queens the coming summer, and wish to get at the most practical mode of introducing generally over the country. I have a convenient wooden box weighing only 2½ pounds, in which I can carry three dozen queens, with food to last them one or two weeks.

Bees in Eastern Ohio, and in Pennsylvania west of Pittsburgh, during the last summer made but little honey, and did not supply the losses of stocks.

Italian bees have shown their superiority, most especially in the number of swarms produced.

If we could only manage to introduce all queens safely to the hives for the people over the country, the number of our sales would be increased fourfold. I would give good wages for hands that could do such work.

R. WILKEN.

Cadiz, Ohio.

It is a singular fact that wax is more rapidly and largely made by feeding the bees with dissolved sugar, than from the honey they collect themselves; the sugar thus evidently containing more of its constituent elements.

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* Will appear in a future number of the BEE JOURNAL.

Chautauqua County (N. Y.) Bee-keepers' Association.

Pursuant to notice a bee-keepers' association was organized at Delanti, on Saturday, January 29th, 1870. J. M. Beebe was chairman of the meeting, and P. Perrin secretary.

On taking the chair, Mr. Beebe appropriately addressed the meeting as to the nature of the proposed association and the utility of its formation, as follows:—

"*Gentlemen Bee-keepers*, As I understand it, we have met here to-day for the purpose of organizing a Chautauqua County Bee-keepers' association. I hope we all see the utility of such an object, and may unitedly make an effort in that direction and be certain of success. We read in the agricultural papers the reports of those who make bee-keeping a speciality. Those who make the most from bees are those who best understand their nature and habits. By meeting together and freely discussing the subject, we may profit much by each others' experience. This county is one of the best in the State of New York for bee-keeping. No better honey is carried to the New York or Chicago markets, than the honey from Chautauqua county. The difference is not in the bees that gather the honey, but in the plants from which the honey is extracted. Our principal honey producing plants are white clover and basswood; and as these furnish an abundance of the very best honey in the world, it remains for us to furnish ourselves with the means of securing the delicious sweet that has so long been allowed to go to waste. And we know of but one way to do it—that is, by keeping a sufficient number of bees to gather it. Man cannot gather it, nor has he ever invented a machine by which it may be secured. And here the question very properly arises—how may we best propagate this little industrious honey-bee? As well as many more questions of like importance, for the better understanding of which an association of bee-keepers is intended. We can statedly meet together and report our success or otherwise, our ways of managing, &c., and learn of each other; and all who wish to become interested in bee-keeping should meet with us, and take part in the discussions."

The Secretary then read a letter from Mr. J. C. Cranston respecting the bee-moth and its ravages. Then followed a general discussion on the bee—how to raise the greatest amount of honey with the greatest profit, and other similar questions. After which, on motion, the President appointed the following committees, to report forthwith:

On Constitution—Messrs. C. E. Benton, E. L. McCullough, and P. M. Miller.

On Permanent Organization—Messrs. N. Crissey, H. Miller, and O. E. Thayer.

Thereupon a recess of ten minutes was taken, and on reassembling, the Chairman of the Committee reported a Constitution for the Association, which being read, was adopted by the meeting.

The Committee on Permanent Organization reported the following list of Vice Presidents: M. C. Tarbox, Arkwright; E. H. Jenner, Busti; J. R. Hatton, Clymer; O. E. Thayer, Carroll; L. Simmons, Charlotte; H. Harrington, Cherry Creek; J. Wood, Chautauqua; J. J. Cassety, Dunkirk; Wm. Russell, Ellery; S. S. Derby, Ellicott; G. Beardsley, Ellington; Isaiah Golding, French Creek; B. L. Harrison, Gerry; M. S. Snow, Hanover; A. L. Williams, Harmony; J. B. Whittaker, Kiantone; H. Q. Ames, Mina; S. Sage, Pomfret; T. Sweet, Poland; G. Ryckman, Portland; S. G. Hamilton, Ripley; Hollis Thompson, Stockton; H. Sheldon, Sherman; J. E. Cranston, Sheridan; T. Searl, Villenova; and —— Hall, Westfield.

The report was adopted, and a ballot was then taken for the other officers, with the following result.

For President—T. S. Moss, of Brocton.

For Secretary and Treasurer—C. E. Benton, of Fredonia.

For Executive Committee—J. M. Beebe, of Cassadaga; J. C. Scudder, of Kiantone; and M. S. Snow, of Forrestville.

On motion it was decided that the first annual meeting of the Association be held at Mayville, September 20th, 1870, at 12 M., and thereupon the meeting adjourned.

[For the American Bee Journal.]

Non-Swarmers vs. Swarmers.

A question of the greatest importance to most bee-keepers is—How can we secure the largest amount of surplus honey, in the best marketable condition, in a season? Can it be best done by a continued increase in colonies; or is there a limit at which the increase becomes unproductive and unprofitable? I believe all authorities admit the possibility of any given district becoming overstocked. When this limit is reached, either from an insufficiency of pasturage, or from an indisposition of the bee-keeper to increase his stock from any cause whatever, what is the best system of management to secure the greatest amount of honey, with the least cost? Is there any management reduced to a system, by which we can control and prevent further increase of colonies, and make the whole increase of bees continue to store surplus honey, instead of swarming?

There are some questions of much greater importance to most bee-keepers than the one often so discussed as to the best method of increasing the number of colonies, for since the introduction of movable comb frames and the new system of managing bees incident thereto, together with the great fertility of Italian queens, the increase of an apiary to almost any desired extent, in a comparatively short time, is rendered an easy matter.

With anything like skilful management, the number of colonies may easily be doubled annually, and may even be tripled or quadrupled. And where a man "gives his whole mind to it," we read of eight and ten being made from one in a season. As the increase is in geometrical progression, the number in a few years would become enormous, and overrun all bounds. Say that we already have fifty colonies, and take the lowest ratio, in three years more there would be four hundred; and in three more, sixteen hundred; which, to most bee-keepers, would be an alarming extent. It is true I have made no allowance for "mishaps" in wintering or otherwise; but I have taken the lowest ratio, and it is well known that the Italian bees, in anything like a favorable season or district, will send out two or three natural swarms, and the first swarms are very apt to send out others. Our territory thus becomes overstocked, and instead of our bees gathering large quantities of surplus honey, our pasturage only affords enough to take our strongest colonies through the winter, leaving the weaker ones to be doubled up, or to perish.

To say nothing of overstocking the territory, there are but comparatively few bee-keepers who make it an only and especial business. Most of them are farmers, mechanics, &c., who cannot devote their whole time to their bees, or even so much of it as is necessary to attend to over forty or fifty colonies, especially at swarming time, which usually occurs at a very busy season of the year. And suppose they should succeed in saving all the swarms, after having gone to the expense of procuring hives for them, what are they going to do with them? They already have as many as they can conveniently spare the necessary time for profitable management. There are but few places where the annual increase of an apiary can be sold. I have seen places where you could scarcely give the swarms away, if you required an empty hive to be furnished. So we are compelled to resort to the brimstone pit, if we would keep our numbers within bounds. I know some intelligent bee-keepers who practice this, and contend that, under the circumstances, it is the most profitable way that they can be disposed of. A few persons can make a large number of colonies profitable, when they are raising Italian queens for sale, and have a demand for them. But there is not one in a thousand of the host of bee-keepers who wish to keep more than from ten to fifty colonies, to supply their families with the delicious sweet and furnish some surplus for sale, to assist in paying for the family groceries, and for the purpose of affording recreation for their leisure hours.

In order to do this satisfactorily, we want a system of management, by which swarming can be controlled and prevented, and the increase of numbers be made to store surplus honey in the most suitable condition for market; instead of storing it in an additional number of hives, for the support and wintering of an increased number of colonies. When this shall be accomplished, and the system fully developed and reduced to practice, it will stand third of the recent great improvements in apiculture—the movable combs and the honey emptying machine occupying the first and second positions. And I doubt whether the honey-emptier should be placed before it, for say what we will in its favor, the strained honey will not find so ready a sale, at as good prices, as honey in the combs.

Several experienced apiarians have been giving their attention and labor to obtain these results, and with some success. Mr. Jasper Hazen has been experimenting for some years and calling attention to this subject; and from his statements he appears to have been quite successful in results. He says that he has been able to secure from fifty to two hundred pounds of box honey to the hive, and from recent experiments believes that he can secure an average of from 150 to 200 pounds per hive, annually, which certainly seems very satisfactory. He shows by a calculation the advantage and greater profit of keeping a fewer number of non-swarming colonies; and if the basis of his calculations is correct his "figures cannot lie." Nor have I any reason to doubt the basis of his calculations, nor his statements in regard to the results of his system of management, as some one has done. Although he is a stranger to me, I go for treating all men with such courtesy as to credit their statements until they are proven incorrect. He has manifested no disposition to "keep his light under a bushel," but has repeatedly published accounts of his system and its operation; and that system is not at all confined in its application to his particular hive. It may be used in connection with various other styles of hives. While I confess that I have failed to prevent, or even to retard swarming by simply giving plenty of surplus box room (at least it seemed to me plenty), there are too many contingent circumstances to be taken into consideration, for me to say that, because I have failed to secure such result, therefore his statements in regard to *his own* are incorrect. I have a case in mind now, of last season's experience. A strong colony of Italians, in a standard Langstroth hive, was furnished early with six 5lb. boxes—some of them containing empty combs. They stored some honey in the comb while the apple trees were in bloom, but on the 2d of June they swarmed—leaving the boxes empty, having removed from them all the honey they had previously stored therein. And they did not stop at one swarm. But I have not experimented to any extent, to test the system. I have only used hives of the ordinary size. Should I succeed in achieving such results as Mr. H. reports, I shall be better satisfied with it, than anything I have yet seen in bee-keeping.

That veteran and successful apiarian—Mr. M. Quinby—who has always favored progress and improvement, whether of his own origination or of others, having felt the necessity and the importance of such a system, gives the gist of the desired improvements, in the following concise language:—"*I want to control swarming, and* PREVENT *it, not by giving extra room and then guessing that they will not swarm. I want to be certain.*" Yes, that is just what many more of us want! He intimates that he has secured such results for himself, with his new hive and new management, and has reduced it to a system; which, as I have before said, is an improvement in bee-keeping which, in my humble judgment, deserves to stand second only to the introduction of the movable combs. I hope Mr. Quinby will more fully develop this system, by giving a detailed account of its operations, and his success with it the past season. Some one else will soon be putting in claims for its discovery, and claim a patent right for it; or they will improve upon it before they know what it is. This is a fast age for improvements, "*so called.*" One man already says—see BEE JOURNAL, Vol. V., page 125—"Although I do not know the exact plan of his (Quinby's) new hive, in one thing I think ours are superior. It is in not having the frames connected in any way with *any part* (italics not mine) of the hive." There we have it! Frames don't touch the hive, top, side, nor bottom! and not even "*connected*" by the ends of nails (or standing on stilts) as the frames in Mr. Hazen's hive. Probably suspended from a pole above, by some "new but simple and ingenious device" —but I am digressing.

It is to be hoped that Mr. Quinby and Mr. Hazen will see proper to continue to give us accounts of their operations, in the AMERICAN BEE JOURNAL—that most excellent and impartial medium of communication for all bee-keepers.

I should like also to hear from those who have used the honey emptying machine freely. What effect has the repeated emptying of the comb upon the swarming propensity of the colony?

Pelee Island. THADDEUS SMITH.

[For the American Bee Journal.]

Replies and Remarks.

I have received several letters from correspondents, requesting me to give my views on the prevention of swarming; also, how to secure the most honey—whether by allowing a moderate increase, or by preventing swarming altogether. Among the rest, NOVICE asks a favor (see November No. of the BEE JOURNAL, page 184). I have always experienced the most difficulty in the prevention of swarming, in seasons when bees gathered sufficient to breed rapidly, yet not sufficient to store surplus or to build comb. In such a season, with a very prolific queen, providing there is not more brood comb than she can occupy with brood, cutting out queen cells was no preventive whatever, especially with the Italians. With the black bees a sure preventive has been to remove the old queen early in the season, and substitute a young one. But with the Italians that proves to be no preventive at all. Provided they are gathering honey rapidly, I have had no difficulty *with this method and the hive I use.* Keep abundant box room, and as one set are partly filled, raise them and insert another set under; and in the meantime take out occasionally a frame from the brood chamber, containing brood or honey, or both, and insert an empty frame for them to fill. This gives the young bees full occupation below, and also makes room for the queen at the same time. And here a small frame is indispensable, for reasons which I have before given. In times when they are gathering just sufficient to brood rapidly, and not sufficient to store, and you have a number of colonies, you will find some of the queens have more comb than they can occupy. Exchange this empty comb with colonies that are full of brood, until all are equalized.

To a beginner Mr. Quinby's queen yard would be an advantage, to prevent swarming. But in that case you are obliged to cut out queen cells; for if you allow young queens to mature, they will lead out a swarm.

The reader will recollect that, in the spring of 1868, I had thirteen swarms of bees, and eleven of them were as good as Gallup knows how to make. Out of those swarms, I selected one, no better in any respect that I could perceive, than ten others, for the purpose of seeing what I could make out of it. I was determined not to neglect it in any manner, but to attend to everything at the proper time. (You will understand that I am a hardworking farmer, and can as yet only devote leisure time to my bees.) Well, now for the result. On the 20th of May I took out a good swarm, Gallup fashion, hived them, and gave them one frame containing brood and honey. At the time I took out the swarm, queen cells were capped in the parent hive. In four days I took out two frames, each containing a queen cell; inserted each frame in an empty hive; adjusted the division board; and drummed out sufficient young bees to occupy each frame completely. On the 20th of June, the first swarm had its hive full of combs and brood. I then took out two frames containing brood and honey; inserted a mature queen cell in each one of those frames, put the frames in empty hives; drummed out young bees from the swarm sufficient to occupy those two frames; and, mind you, I did not have them half occupied; and on the 20th of July I had four good swarms, all full of combs, bees and honey, and seventy-five pounds of good honey in boxes. (You will recollect that our honey harvest was entirely cut off that season on the 20th of July.) All this was the proceeds of one swarm; and our honey harvest scarcely ever commences until the 20th of July; but that season it commenced on the 10th. The surplus was all obtained from the parent stock and first swarm; the other three were all ready to commence storing at the time the gathering ceased. That honey extractor I have never yet had the pleasure of seeing, for I had no use for one the past season; yet I do not hesitate to pronounce the invention just what is wanted by the practical apiarian.

I will answer Mr. Root's question, without giving the reasons at present. In my experience, and in all localities wherever I have resided, a moderate increase has always given the best results, where surplus honey was the object. But a great deal depends on how that increase is brought about; and if done at all, it must be done, the most of it, early in the season. A hive, such as I use, with a frame taken out, containing brood in the height of the honey harvest, appears to be an incentive to increased activity. Whereas a large frame taken out at the same time, does diminish the working force in the boxes. Those advocates of a non-swarming hive, with box room for 100, 200, or 300 pounds of surplus honey, fail to inform us of one fact, and it is one that has been observed by others as well as myself, namely, that in a cold season like the past, or in high northern latitude, such as Lower Canada, for example, with such amount of surplus room, the bees are obliged to cluster on and around the brood, to keep up the necessary temperature, and will consequently not store any surplus. Whereas, if they were restricted to 20 or 30 pounds surplus room, the same colony could and would store considerable surplus. Of course these hives can be constructed so as to be properly managed by an intelligent and well posted bee-keeper. Then, why not tell us of this? In the hive I use I have had a swarm build their comb, store and seal up fifty pounds of surplus in five days. But the weather was just right, and in the time of basswood blossoming—the greatest honey-producing blossom that I am acquainted with. We will suppose that Mr. A. buys one of these non-swarming hives. He puts a swarm into it, and the first season they only partially fill it with comb. They are well wintered, and have a good prolific queen. The following spring they gather honey enough to breed rapidly; yet not sufficient to induce them to build comb. When the hive becomes populous, and the queen has all the comb occupied, the bees will swarm. On the other hand, let us suppose they filled their hive with combs and honey, but filled it in the fall, when the queen was breeding very little. The following spring they gather sufficient honey and pollen to keep up the breeding, and do not draw on the last years' store. When the queen has all the cells occupied, they will swarm. What really constitutes a non-swarming hive is, to give the queen empty cells as fast as she wants them, and the workers full occupation; and this can all be done in any form of Langstroth hive I have ever seen. When any one tells you that his hive will give hundreds of pounds of surplus honey, whether the season is good or not, simply because it is *his* hive, it looks much like Jonah swallowing a whale—decidedly *fishy*. E. GALLUP.

Orchard, Iowa.

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[For the American Bee Journal.]

Wintering Bees.

MR. EDITOR:—I wish to say a few words in regard to wintering bees; having tried various ways. I have buried them, or put them in the ground, covered with straw and dirt, ventilated, &c.; but they came out with combs badly moulded; and mice had got into some of the hives, making havoc among the bees and combs, so that I lost several colonies. At another time I took my bees to a neighbor's cellar, which was dry and cool, with some frost in the coldest weather. I did not lose a swarm that winter. Last winter I took my bees to another neighbor's cellar, which was dry, but very warm, with no ventilation worth speaking of. The consequence was that my bees worried themselves so much that many of them eat up all their honey, and died, though the colonies were strong and heavy in the fall.

With my little experience I became satisfied that I now knew what was needed. Last summer I built me a new house, and concluded I would put a cellar under the whole of it, so that I might provide a place for my bees entirely separate. I arranged a cellar under one wing entirely separate from the others, so that I could shut it up so close that no frost could get in, if I chose to keep it out. This cellar, in which I have my bees, is about fifteen feet square. I have it well ventilated, with one widow on each side—have windows hung on hinges, so that I can raise or lower them, as I choose, to let the air pass through. I keep a thermometer in the cellar, and try to maintain the temperature at about 35° above zero. Some days it will go higher and some days fall lower. When it gets colder I lower the windows, and when warmer I raise them. I put wire screening on the outside of the windows to keep out rats and mice, then place straw against the screening to darken the cellar, yet the fresh air is constantly passing through.

I have examined my bees this spring, now the 10th of March, and find them all in good condition except one, from which I took about twenty-five pounds of honey and transferred it from an old hive to a movable comb hive. I supposed they had honey enough left to winter on, but they came up missing. Last fall I put in all those that I thought would winter well, setting them in the back part of the cellar, one over the other, about twenty-five of them about three deep. Then the weaker swarms, which I knew would not winter without feeding, I placed along the side of the cellar. The very heavy ones I set along the middle, leaving a space, so that I could see to all my bees at any time. From the strong heavy swarms I took cards of honey in the frames and inserted them in the lighter or weaker swarms. Thus equalizing them, so that they are all alive yet, so far as I can judge, and the combs appear to be free from mould.

I spread straw on the bottom of the cellar, and between the hives, to absorb the moisture. I have in it about fifty-five colonies. I left ten colonies out on their summer stands for an experiment in out-door wintering, as I supposed them to be strong and good. I found on examining that I have but four colonies left alive, out of the ten. One colony had about sixty pounds of honey in its hive, another twenty, another five, and another very little. Therefore I would recommend wintering bees in a good dry cellar, well ventilated—where they can be looked after at any time, and fed if needed.

I would not know how to get along without the BEE JOURNAL. It has been of much value to me already, and I would advise every one who keeps or intends to keep bees, to take it. I enclose two dollars for my subscription, and two dollars for a new subscriber, to whose address send the JOURNAL.

Decorah, Iowa. JOEL DAYTON.

* * *

Artificial colonies should not be made except when forage is plentiful and bees gather honey freely, unless the owner is prepared to feed them liberally.

* * *

Bees are endowed with an instinct that teaches them to avoid certain plants that might be dangerous to them. Thus, they neither frequent the oleander (*Nerium Oleander*) nor the crown imperial (*Fritillaria* imperialis), and they also avoid the *Ranunculaceæ*: on account of some noxious property; and although the *Melianthus major* drops with honey, it is not sought.—*Schuckard.*

[For the American Bee Journal.]

Conklin Diamond Hive Rejoinder.

Mr. Editor:—As the columns of your most valuable Journal are open to all attacks, of right we claim the chance of defence. Let me say to friend Miller, of Peninsula, Ohio, to "keep cool," don't take your hat off and go off half-cocked in great haste, for we wish to have a little friendly talk to you and the readers of the Journal. It is unpleasant to be jumped on so rough-shod and be forced into a controversy to defend one's rights and reputation, especially when the columns of the Journal ought to be occupied by, perhaps, more important matters. But then there is perhaps nothing more interesting to the bee-keeper than the best style of hive, to commence with; and as we believe we have at least one of the best, and came by it honestly, we wish to make this statement.

We invented the Diamond Hive in 1862, as we have said before, and tested it; but the arduous labors of a large practice of medicine prevented us from attending to more than from six to eight stands of bees—just for our own use. In July, 1868, believing the Diamond Hive one of the best in use, (as I had tested the Langstroth, Flanders, American, Quinby, and Buckeye hive form of movable frame, besides several hives that were not of the frame patterns,) I applied for a patent, which was granted October 20th, 1868. I also obtained, as soon as published, Langstroth's great work on the Honey Bee, Quinby's "Mysteries," Flanders' "Sweet Home," King's Bee-keeper's Text Book, Mitchel's Guide, and Thomas' Canadian Bee-keeper's Guide, all of which I have read, besides the five volumes of the American Bee Journal, all of which I have read with much interest. So you see that I am not entirely ignorant of the wants of a good hive.

Mr. Miller states, on page 186 of the Bee Journal, Vol. 5; "You convey the idea that all that is required to obtain straight combs in the Diamond hive, is to level the hive, put in a swarm of bees and let them have their own way in building." This, with one addition, is correct; that is, to see that the frames are true *in the hive.* Now, "we speak that which we do know, and testify to that which we have seen," that if you will see that the frames are true in the hive, or not winding, and the hive is level, with the bees in it, they will build their combs straight in the Diamond Hive, without any other guides or division boards than the simple empty frames furnish. Of course, by the division board, which is tight-fitting and yet perfectly easy of removal, we can adapt the capacity of the hive to the size of the swarm; thus enabling a small swarm to send more workers to the field than if in a large hive without such division board; though its use is not necessary to secure straight combs.

Don't begin to cry up—"Stop thief!" and doubt the truthfulness of our Bennington colony statement. We have told you the truth, and if you wish to cross-examine the witness, I will make this offer: If you, or any of the readers of the Journal, in America or in Europe, will visit me and the Bennington colony, they shall be taken around among the bee-keepers, and have the chance of examining all the hives; and if they are not as we have stated, I will pay your fare here and back, and your expenses while here. We are five miles east of Ashley Station, on the Cleveland and Columbus Railroad, thirty-six miles north of Columbus. A hack runs every day to the station. Now, gentlemen, if you wish to cross-examine the witness to get the "*whole truth*," come on. You may have invented, five years ago, and used, hives with frames hung angling, and got crooked combs in them. I can show you hives of one man in this neighborhood that were filled last year, with frames hung angling, and have crooked combs; but they are not made like the frame of the Diamond Hive. They are placed two inches apart, and the bees were compelled to build crooked in them to keep the usual distance between the combs.

I said, in the April number, Vol. IV., of the Bee Journal, that I invented the Diamond Hive in 1862, which is more than five years ago. You may have been the first inventor; but don't mix your testimony. Until otherwise proved, I claim to be the first inventor and patentee. We profess to be truthful people down here in Quakerdom; and if we are accused of false statements, we ask for investigation. You speak of the Michigan convention, and ask if I was there. I was, and received the first premium and diploma at the State Fair, over thirteen hives in competition—among which were the Langstroth, America, Buckeye, and Thomas' hives, by decision of as practical and disinterested a committee as there is in the United States. If you doubt my statement ask Prof. Cook, of the Agricultural College at Lansing, or Mr. J. H. Townly, or E. Rood, Esq. At the Bee Convention the majority of the committee were in favor of the Diamond Hive, if I mistake not; but the chairman was interested in territory for the Thomas Hive, and the committee did not agree. The chairman reported in favor of the Thomas Hive, (which, by the way, is a very good one in many respects.) The Secretary at first refused to put it into the minutes, on account of the disagreement; but after some discussion in the convention, it was allowed to go on the minutes, as I had been awarded the premium at the fair. These are the facts in the case.

Perhaps Mr. Miller lives as near Prof. Flanders as I do; so don't link one man's reputation with another's because you don't like him.

It is not a fact that we obtained straight combs in the frames by the use of comb-guides and division boards, as you accuse us; only such as are a part of the simple empty frame.

As far as Mr. Price's statements are concerned, I have simply to say, I wrote an answer to that, sending a copy to the American Bee Journal. I do not know why it was not published.*

A. V. Conklin.

Bennington, Ohio.

* The reply referred to never came to our hands, and of course could not be published.—Ed.

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Bees dislike any quick movements about their hives; more especially any motion which *jars* their combs.

[For the American Bee Journal.]

A Word of Explanation.

In reply to dozens of correspondents, in regard to my certificate in Dr. Conklin's Circular, I will say that said certificate was taken partly from the AMERICAN BEE JOURNAL and partly from private letters, and entirely disconnected from the several subjects. Thus putting words together answers the Doctor's purpose, no doubt, admirably. But in this same manner, I can prove by Scripture that the Doctor ought to commit suicide—"And he departed and went and hanged himself." "Go thou, and do likewise!" Now, no one can deny that this quotation is pretty near Scripture. The only question is, is it rightly put together?—I will say this much: I have consented to take one of the Diamond hives on trial; and the Doctor has forwarded one to me, together with the right to make and use, free of charge. I have had a favorable opinion of that form of hive—say nothing about the Doctor's fixtures. But I can tell its worth better after testing it.—I have also received one of Dr. J. Davis' Queen Nurseries, together with a right to use, &c., but have had no opportunity to test it, as I received it too late last fall.

I hear that other parties are using my name in order to sell their wares. According to this Gallup's name must be worth something to said parties. Now what I wish distinctly understood is this: whenever Gallup discovers anything in the bee line worthy of a certificate or recommendation, he is *the very man* that will not be afraid to say so, and that through the public press; and until he does so acknowledge anything worthy, you may take it for granted that the use of his name is unauthorized.

No man can well be a true man who is always seeking to know how far he can go towards a lie and yet not be technically unfaithful to the truth. This half permissive lie does not come up to my standard. All this kind of management, all this equivocation, all this dexterity in avoiding exact truth, does not exactly agree with my idea of manliness. E. GALLUP.

Orchard, Iowa.

[For the American Bee Journal.]

Patent Hives.

An article in the March No. of the BEE JOURNAL ought perhaps to receive some notice from me. Mr. J. M. Worden, after describing a hive embracing the patented features of my hive, and claiming that he "has attained similar results" with Mr. Quinby in constructing a hive, and by such language leaving it to be inferred that he is the inventor of it; as he also says "it is and ever will be free from patent, so far as I am concerned," is ungenerous enough to use the following language:

"Let us all try and contribute our mite, that we may perfect a hive and a system of bee-keeping free to all, and cease to patronize *the cormorants that have for years plundered* the industry of the country. Cease to patronize patents, and they will soon cease to be the *disgusting nuisance* they now are, &c."

But few persons will agree with Mr. Worden that the bright array of eminent inventors of our country who have, by their labors and study, placed us in advance of all the world in science and art, have only been so many "cormorants, plundering the industry of the country," or "disgusting nuisances." No doubt he uttered this uncalled for denunciation in a fit of thoughtlessness and must be ashamed of it by this time, for a man of his intelligence must know that the industry of the country has been almost entirely built up by patented inventions, and most of the inventors have been inadequately rewarded for the labor and thought expended on their inventions. The "industry of the country" has the best end of the bargain. Does he suppose that one invention in ten would ever have been made, had the inventors expected nothing in return for it except the "greater happiness" he romantically supposes "a good and true man" feels in "being serviceable to his fellow-creatures without the hope of fee or reward?" Does he not know that without the kind of protection which our government throws around the work of a man's brains equally with the labor of his hands, and the property he acquires by his fortunate possession of wealth, that all important discoveries and inventions would be held as secrets and only sold under oaths and bonds, and that many of them would die with the inventors, as did the lost arts of the ancients? "The laborer is worthy of his hire," and brains have, in all ages, commanded greater wages than muscle, and justly so. "Cease to patronize" thought and genius, and they will soon cease to be expended on inventions, the "disgusting nuisances" friend Worden makes them out. Act on his theory and *practice* of laying hold of another man's property and claiming it as your own, and we return to

"The good old rule, the simple plan,
That he may take who has the power,
And he may keep who can."

He says of his arrangement, "whether it necessarily conflicts with Mr. Adair's patent, I do not know." The description he gives of the hive embraces the most important of my claims. A part of the specification is as follows:

"The nature of my invention consists in forming the different chambers, apartments, and honey boxes of a bee hive of a series of vertical sections or rims, so fitted to each other, in sufficient number, as to form close boxes of the size required, &c." "The whole is enclosed by an outer case or box, &c." Each section is formed by nailing together four thin pieces of wood. For the brood chamber they are generally about one-half an inch in thickness, and for the honey boxes about half that thickness. They are all about one and a half inch wide, and of the proper length to make the sized box required. The upper piece and the lower project slightly beyond the other two pieces in front, and set back the same distance from the edge of the same in the rear, so as to form shoulders, so that when the sections are joined together they fit into each other to hold them in their proper places. A sufficient number of such sections being so put together, a narrow wooden strip, or *its equivalent*, is nailed or screwed on the upper boxes, to hold the whole together firmly. The brood chamber is constructed in substantially the same manner, the proportions only being different.''

The whole of the specifications would take up too much of your valuable room. I have quoted this part to show that the hive described by Mr. Worden is covered by my patent, and will only quote so much of my claims as covers the foregoing specifications.

" But what I do claim as new and desire to secure by letters patent, is—

1. The honey-box, constructed as described, &c.
2. The sections of the brood-chamber, constructed as described, &c.''

The rest of the claims and specifications refer to things not embraced in Mr. Worden's description.

I have had considerable correspondence with Mr. Worden, and when he wrote to me that he had made a different arrangement of the honey-boxes, by placing them on the sides of the chamber, two months before his publication in the Journal, I wrote to him that I was using the hive in that form, but that my last and better arrangement placed the boxes at the back of the hive, and sent him a drawing and description of my side gathering hive. Even if the article was written before that, he had time enough to correct his assumption of originality; which I suppose he would have done had he thought of it, for I believe him to be an honorable gentleman, and bear him no malice.

He suggests one objection to the form of sections I use, that "bees would be liable to be crushed in closing them.'' This is imaginary, and he would not make it, if he had had more experience with them. I have used the various forms of movable frames, and in none of them is there as little danger of crushing bees as in my sections. The sections can be put together, even if the sides are covered with bees, without killing one, as you only have to press lightly against them with the section you are putting in, then draw it back a little, and they will all take the hint and get out of the way.

D. L. Adair.

Hawesville, Ky. March, 1870.

[For the American Bee Journal.]

Dimensions, Form, and Management of Hives.

In the Bee Journal, Vol. 5, No. 3, page 60, Mr. Charles S. Paine asks Gallup a question, and you never knew Gallup to refuse to answer a question when asked civilly, or withhold his views on the subject. It has only not been answered before for lack of time. Mr. Paine, referring to two other writers, says—" neither of these gives any reason for their statements,'' respecting the size of hives. In some of the back numbers of the Journal, I gave this for one reason: That, under favorable circumstances, a good prolific queen would, in three weeks, occupy with brood every or nearly every square inch of comb in a hive containing two thousand cubic inches, and that consequently a hive of less capacity would restrict the breeding of the queen. A hive of one thousand seven hundred and twenty-eight cubic inches, or one cubic foot, is all that is required, if you give box-room—that is top boxes, and as soon as one set is partly filled raise them and insert another set under, and give free access to the boxes, which must be done if you expect the full benefit of surplus honey gathering and storing. But if the honey crop is cut off suddenly, (as is frequently the case,) while the combs below are entirely filled up brood (and a queen that will not occupy that amount of comb during the storing season, should be superseded,) the bees must be fed or starve. I have repeatedly had them entirely destitute, both in Canada and Wisconsin, in that size of hive; and then again, there would be seasons when they would do very well.

But here is another difficulty. It is almost impossible, in any locality where I have been, to prevent too much or over-swarming in a hive of that form and capacity, without a great deal of bother. It is not a particle of disadvantage in the form of hive I use, to have two frames on each side of the brood filled with honey in the body of the hive; and if not wanted for the bees, it is just as good surplus as it would be if stored in boxes, for if the queen does not breed in them there is never any pollen stored there than there is in boxes; and with that sized hive we are always safe.

There is another reason that I stated before, but will mention again. We almost always have a scarce time in June, both here and where I lived in Wisconsin, and I want honey enough in the brood chambers to last through that time, and keep up breeding to the full capacity of the queen. I like it much better than being compelled to feed; and if we have our hive well filled with brood at the time the basswood blooms, we are almost sure of a good crop. You will recollect that in 1868 the honey crop was cut off in this vicinity, on the 20th of July. My bees wintered well, but the hives were not near as full as I like to have them. If they had been, I should have had honey on hand in the hive, and it would have saved me all my feeding black swarms this season. As it was, I kept equalizing the stores, and when the old honey was gone in one hive it was gone in all. The consequence was, my Italians cut their own fodder, and the others had to be fed. Even black swarms did fairly in 1868, where they had access to buckwheat pasturage, and were in hives of the right dimensions and form.

It appears to me that if queens will occupy the whole two thousand cubic inches with brood, in one locality, they ought to do so in another, at certain seasons of the year.

Elisha Gallup.

Osage, Iowa.

The quantity of pollen that is collected in the course of a season, by the diligence of the bees, has been estimated at from sixty to seventy pounds.—Schuckard.

A *cute* American naturalist has observed that the bee as it flies from the hive is oddly enough, going to *hum*.

[For the American Bee Journal.]

About Uncapping.

Mr. Editor:—Your correspondent, I. F. Tillinghast, in the March No. of the Bee Journal, complains of having had a good deal of trouble in uncapping combs of honey, and begs information of any who may have had better success in the matter. I took out several hundred pounds of honey with my emptier last fall, without finding any difficulty in uncapping; and if my experience will help your correspondent, I will gladly tell him how I did it.

I think his difficulties in *uncapping* must have arisen from the fact that he neglected to keep his knife *warm* while performing the operation. If this precaution is well observed, almost any good-sized knife will answer—although some are better than others. Sometimes I use a butcher knife; at others, an ordinary dinner or tea knife.

The longer and thinner the blade is, and the sharper the edge, the better. My favorite instrument is a *pallet knife*, about ten inches long, sharpened on both edges, and bent near the handle like a mason's trowel. But the knife, of whatever kind, must be kept *warm*.

In uncapping I usually employ *two* knives. One I keep in a vessel of hot water, while using the other. When the knife in use becomes too cold to work nicely, I return it to the vessel, take out the other, pass it through a cloth to dry and cleanse it, and proceed as before. In this way combs can be uncapped very rapidly and so smoothly that they will not look as if "mice had done it." But if the *uncapping* were ever so nicely and effectually accomplished, I should still be very unwilling to undertake to empty combs that had stood any length of time, without bees, in a cold room, as late in the season as October. I emptied combs in October last; but it was done immediately after the bees had been taken from the hives. In a few instances the combs stood some time, but they were kept in a warm room, not however "behind the stove!"

Mrs. M. D. Miner.

Glenville, N. Y., March 21, 1870.

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To Stupefy Bees.

Put two teaspoonsful of chloroform into a cup; soak a bit of rag in it; then put the rag into the box or hive, closing the entrance. The bees will almost immediately begin to drop, and in less than ten minutes every bee will be stupefied. They will recover in about half an hour; but will not fully recover their activity till next morning.

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As, in April, brood is rapidly maturing in the hives, there is a largely increased demand for honey, and great care should be taken to prevent the bees from suffering for want of food.—*Langstroth.*

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Bees seldom swarm if honey is not so abundant that they can gather more than they need for immediate consumption.

[For the American Bee Journal.]

Uncapping Cells.

I was interested in reading the trials of a correspondent in uncapping honey for his machine. I use a knife which I procured from Mr. Langstroth, with my first machine. It is thin, like a bread or shoe knife, eight or ten inches long. The shank is bent, so that the handle sets off about an inch, on a line parallel with the blade. One man can uncap nearly as fast as another can extract the honey with the machine. I keep the knife sharp, and have never tried heating or in any other way preparing it.

In the fall, or winter, the combs must be kept in a warm room a few hours, till they have become warmed through. In the summer it makes no perceptible difference whethert he honey is extracted the day it is removed from the hive, or not. Any one who is going to get out honey every day or two, in the summer, will find it a great convenience to have a complete can for the rack to revolve in, and a place near the bottom for drawing off the honey. A cover of cotton cloth may then be thrown over the top, or tied on, thus completely excluding all flies and bees. Mine holds fifty pounds under the rack.

Caution should be used, or too much honey may be removed from the hive, for the good of the swarm. It is better to leave honey enough, than to remove it, and depend on feeding.

J. L. Hubbard.

Bucksburg, N. J., March, 1870.

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[For the American Bee Journal.]

Honey Knives.

For the benefit of Mr. I. F. Tillinghast and "whom it may concern," I will give a description of my honey knives.

No. 1 is made of a piece of an old woodsaw. The blade is very thin and springy, sixteen inches long, exclusive of the handle. The teeth are removed smoothly. One side ground to an edge; end square and also ground to an edge. The other end is mounted to a flat wooden handle, fastened on with four hickory pins, instead of iron rivets. This knife gives me entire satisfaction in slicing off unequalities on combs, uncapping cells, &c. Its length and elasticity enable me to use it on crooked combs.

No. 2 is like No. 1, only the blade is thick and firm; good for loosening old combs on box hives when transferring, and otherwise where No. 1 would be too limber.

No. 3 is a thin-bladed bread knife, eight inches long, bought at a hardware store. This I use about honey boxes, and wherever it is more convenient than No. 1.

No. 4 is a thin short knife, to slice up combs, and to cut it and fit in frames when transferring.

The edge on honey knives should not be smooth, but rather gritty, such as a good scythe stone will make.

With the above knives I find myself sufficiently armed and equipped for all emergencies.

Henry Crist.

Lake P. O., Stark Co., Ohio,
March 25, 1870.

[For the American Bee Journal.]

Hives, Transferring, &c.

Mr. Editor:—Your correspondent, H. C. Durborow, wishes me to explain how we make our division boards so that bees can get into the boxes, and how we make the entrances to the boxes. Last season was the first that we used the hive to which he has reference, and we have not as yet had boxes filled. We prefer the use of extra frames, which we empty with the "machine."

We intend to try boxes on some of our hives this season, however; and have several plans for accomplishing the desired object.

Our frames run crossways of the hive, and of course the boxes are to be put against the sides of the combs. I do not think it necessary to retain the division board, when boxes are used. By leaving an opening in the end of each box, the division board can be removed, and the ends of the boxes supply its place. If boxes were to be placed against the ends of the frames, I would leave the end of each box entirely open. The easier the access to the boxes, the better; but when they are placed against the combs with ends open, the bees are apt to lengthen the cells of the comb so that it will project into the boxes, instead of starting new combs in them. I have no trouble with queens laying eggs in them.

He also asks—"Do you have a honey board on top of your frames, during the summer?"

We have as yet used no honey board on these hives, but think that the use of one would be an improvement. If made out of slats, so as to fit over any number of frames, it could be used to better advantage.

In regard to the best time for transferring bees and combs to frame hives, there is much diversity of opinion; some preferring to perform the operation before, and some after, swarming. I have tried both and think if I had a dozen swarms to transfer this spring, I should do it as early in the season, as honey becomes plentiful enough to insure the bees against consuming more than they could gather.

Do not try to make two swarms of one, when transferring, even though you think there are bees enough to warrant it. Better wait until they get their combs all filled with honey and brood, before making the division.

For holding the combs in place in the frames, when transferring, until fastened by the bees, we use clasps made of wire. Two to each comb, passing around the frame from top to bottom, will hold them securely, occupy but little room, and are easily removed.

I. F. Tillinghast.

Factoryville, Pa., March 14.

[For the American Bee Journal.]

My Views of the Italian Bees.

Mr. Editor:—It may perhaps be very easily accounted for why we still find some persons who claim to be intelligent bee-keepers, making the assertion that the Italian bees are no better in any respect than the native or black bees. The fact is, they are ignorant of the matter in question. In 1867, I purchased one Italian queen, paying ten dollars for her in the fall of the year, as late as the first of November. In January her stock began to show, and by the first of May there was not one black bee to be found in the hive. When I considered it time, I swarmed them; sometime in June. About the last of August they threw off a very large swarm. All wintered finely.

The past season was one of the poorest for bees in our section, that I ever knew. I had wintered one hundred and fifteen swarms. In the spring of 1869 they were in the best condition possible. On the first of April many of my stocks were in fair condition for dividing, plenty of honey and bees; but by the first of May they were on the decrease; on the first of June growing worse, and in July they were in a starving condition. No swarms from my native bees. I swarmed most of my Italians artificially; some of them twice. Young swarms filled their hives. Old stocks had plenty of honey in July, and were gathering it very fast when my native bees had to be fed. I can prove by reliable persons that on several occasions one of my Italian stocks was working and flying more briskly than fifty stocks of my black bees. Of the natives not one stock in twenty has honey enough to carry them through the winter without feeding. I do not consider Oswego county a first-rate section for bees.

I was not aware that bees were such short-lived insects. Very likely in a good season, they would live longer; but what say you, bee-men, to this fact. The last of August, I introduced an Italian queen in a very populous colony of native bees, and in forty days from the time I introduced her not a black bee remained in the hive, which was then well stocked with Italians.

I have about fifteen stocks of Italian bees, and intend to Italianize all that I succeed in wintering. I do not wish to keep a swarm that is not pure Italian. After keeping bees thirty-five years and experimenting with them, I am willing to risk the change. The Italians are more quiet to handle, better workers, less inclined to rob, and are beauties. I am satisfied with them. The hybrids are different in some respects. They are good workers, but somewhat ill-tempered and troublesome to handle.

I have just heard a singular story from my native State, Massachusetts. An old neighbor was at our place, and speaking of Italian bees, said—"We don't exactly like the Italians, as some of our bees were robbed by them last fall." "Were they owned near you?" "No, not nearer than six miles." I thought probably they were owned by Mr. Cary or Mr. Alley. If either of these gentlemen has bees that will *go six miles* after honey, I would like to engage fifty queens, as that goes far beyond my bee experience.

Fulton, N. Y. W. C. Newton.

Bees are always more irascible when their hives are disturbed after it is dark; and as they cannot see where to fly, they will alight on the person of the bee-keeper, who will be almost sure to be stung.—*Langstroth.*

[For the American Bee Journal.]

A Queer Notion, and Bronze Bees.

Mr. Editor :—It is not to be expected that we shall all see or think alike. Although I am forty-five years of age, and have made bee-keeping a specialty for over thirty-five years, I seldom dispute with any person about it. But just look at this notion, coming from a man older than myself. In a conversation with several bee-men, one inquired of me whether I had ever seen a bee unload or remove the pollen from its legs. I told him I had, and that it was done thus: the bee passes over the comb or a portion of it, till she finds a cell that seems to suit; she then thrusts in both legs containing these little pellets, taking them off in a very short time, with the next pair of legs. "No such thing," says the man, "it is thus—the bee coming into the hive, commences to run, and runs until she gets up sufficient heat by friction to melt the pollen; then the other bees take it off for her!" I considered that he had told me all he knew about bees, and walked quietly away, as he was too wondrous wise for me.

I will mention what to me is a curiosity. I have a colony of black bees—that is the queen is a native or black; yet about one-fifth of her bees are entirely *bronze-colored*, wings, legs, all entire, and about one-third of her drones are of the same color. The other bees and the drones are altogether like common bees, not one showing any mark of Italian blood. I intended last summer to send some workers and drones to the Bee Journal, but forgot it. If the entire colony was of the bronze order, it would be a prize in my estimation.

In my next I propose giving my experience in wintering and feeding bees, as I have wintered some on their summer stands, some in the cellar, some in a chamber in a building built for the purpose, and some buried in the ground.

Fulton, N. Y. W. C. Newton.

[For the American Bee Journal.]

Preserving removed Queen, when Italianizing Stocks.

On several occasions last season, while Italianizing stocks, I preserved some of my removed queens in the following manner: I would select a stock of bees so strong in numbers that the temporary confinement of its queen would be no material loss; cage the queen, and suspend the cage containing her between two combs. After leaving her thus for twenty-four hours, I would suspend by her side, two or three more cages, each containing a removed queen—leaving three or four inches of space between the several cages. The bees would now feed all the queens without exception. After the queen belonging to the hive had been caged seven days, I released her, first destroying all the queen cells, if any had been started. The released queen would immediately resume her duties, while the bees would continue to feed the other queens two or three weeks longer; but in neither case over thirty days from first to last.

In case of any emergency, I found these preserved queens very convenient to use. As my first experiment proved entirely satisfactory, I made all the rest in like manner, with the same results. I cannot say therefore what variations, or whether any, can be successfully made; and although successful in every trial, I would as yet hesitate to risk the life of a valuable queen on so slender a thread.* Henry Crist.

Lake P. O., Stark co., Ohio,
March 9, 1870.

* We have occasionally preserved common queens in this manner after removal, till their successors were accepted and had begun to lay eggs; in no case longer, however, than eighteen or twenty days.—Ed.

[For the American Bee Journal.]

Correction.

In my inquiries on page 167, Vol. V., No. 8, I should not have said that my bees died and (afterwards) that I removed them to the house cellar. But that, having almost a passion for bees and honey; and believing that one may learn so to manage bees that it will be as profitable as other employments, I purchased several colonies, old and new, in box hives, at four dollars each, and transferred them; also a flour barrel containing seven (7) fresh swarms, most of them very large, being from box hives holding two bushels and over. For these latter I paid eight dollars (not $30), and made five colonies of them, after losing about a bushel by flight.

I put in sixteen colonies, as before. Fearing the old difficulty might have been caused or aggravated by damp air, I removed them to the house cellar, &c.

I am troubled, as friend Grimm says he is (though I cannot see it in his case), with what I call a "Yankee propensity" to occupy too much time with details and circumstances. In guarding against this "besetting sin," I cut my subject too close, like the negro who having leave to cut off his master's dog's tail as close as he chose, cut off his head, and after a moment's reflection, said—"I bleve I've spiled bofe pieces. That's cut cidedly too close to his ears."

My bees were weighed, and the first swarm died the second of February and not September, as the printer would have me say.

The last numbers of the Bee Journal are unusually full of interesting and instructive matter, and must commend themselves to every bee-keeper who has enterprise enough to stand the remotest chance of success.

West Georgia, Vt. O. C. Wait.

[For the American Bee Journal.]

Inquiry.

Do the same rules apply to introducing queens in a nucleus hive as in a full stock? Would it not be best, on receiving a queen, to put her in a nucleus hive until the combs are filled with brood, and then transfer her to a full stock—that is, if more queens are wanted? Will some of my bee-keeping friends answer?

H. L.

Lewistown, Me., March 25, 1870.

[For the American Bee Journal.]

The Honey Season of 1869, in New York.

When I look back over the year 1869, I find no parallel to it, in my bee experience of twenty-three years.

The winter of 1868-69, was very favorable for wintering bees, in this section; and going into winter quarters in good condition, few bees were lost, and they came out in splendid order.

Out of some ninety stocks that I left on their summer stands, without even examining them in the fall, only three died—one for want of honey; the other two, being second and third swarms doubled, had "dissolved partnership" within two or three days after being hived; but the "retiring partner" took all the queens, and thus left the home firm in no condition to increase their stock in trade, which consequently failed in winter.

The spring commenced fine, and from the 1st to the 10th of May, the prospects never looked brighter. Most of the hives that were not full of comb, commenced lengthening down their combs and prepare for swarming; and we began to feel quite nervous as to how we were to get all the hives ready for the expected new swarms. But our troubles in this direction soon ceased, turning our minds to the consideration of how we should keep our bees (with the monstrous broods they were then nursing) from actual starvation. But the bees seemed to understand the situation; for the drones, which had began to fly pretty briskly, were by the workers, made to fly a little more briskly than they desired; and when they left their hives, each with a worker on his back, they were served with peremptory orders never to return; and some of the drone brood was mercilessly torn from the cells before it was hatched. And by the way, this drone slaughter continued during the whole summer; and I think there was scarcely a day in the whole season, but there was more or less "butchering" done. The destroying of drones in May, is nothing very uncommon, only indicating a scarcity of honey, and swarming for that year, if there be any at all, will be late; but to have it continue all summer, is new to me.

But, to return to the adverse change in the fore part of May. Our courage did not fail; for we hoped that the fruit (especially the apple) blossoms would bring a favorable turn. But, alas, the apple blossoms came with the dandelions and raspberries in succession, yet no improvement. Still, as the prospect for white clover was unusually good, we kept up courage, thinking of the "honeyed future," and that perhaps it made little difference whether we got the honey before the swarms, or the swarms before the honey.

The white clover came in abundance, but not the honey! Many swarms came, and with them came starvation! They seemed to swarm more out of spite, than anything else; the bees seeming determined to preserve the queen cells, and the old queen as determined to destroy them. Unable to succeed in this she appeared bound to quit, though she should starve. There was nothing of the old normal orderly swarming this year. It has been a sort of hurly-burly, pell-mell kind of business. I have had as many as six swarms on the wing at a time, and before they got settled, they would all be in one pile, and every queen *pinned*—that is, enveloped by a knot of bees about as large as a hen's egg. I tried putting one of the queens so knotted into a hive, and then adding bees enough for a good swarm; and for half an hour or so you would think it was going to be all well with them; when perhaps the next minute they would all swarm out—some returning to the hives from which they came, and the rest going into the common stock pile again, ready to be divided up anew. By keeping on dividing, I would succeed in making two or three good stocks out of half a dozen.

The clover blossoms continued abundant through June, but all the honey gathered therefrom was so thin, that they would evaporate and consume during the night the pound or two which they had garnered during the day. On opening hives, as I did more or less of them daily, I did not see a cell of new sealed honey till the 2d day of July.

July brought very little improvement. Still we did not despair, thinking we stood a chance yet in buckwheat and fall flowers. Our hearts were cheered by buckwheat commencing with moderate bloom, which lasted five or six days, and induced the bees to put in a rousing amount of brood; in the maturing of which, they not only consumed all they had garnered from the buckwheat, but many of them also consumed all they had previously laid up. By the middle of September they had not a pound of honey left.

Now hope expired; and the question came up what shall we do? Shall we let our bees go by the board, or make an effort to save them? But our troubles did not end here. The good housewives began to beset us in droves, with their lugubrious complaints that, whenever they undertook to make preserves, sweet pickles, pies, or anything sweet, my bees pounced on them and so monopolized their supplies that they were forced to surrender. The grocery men, too, joined in the chorus, saying—" Stratton (for poor Stratton has to bear all the blame here), your bees are carrying off all our sugar;" and the *blessings* we got were anything but *honey*. Feeling pricked in conscience, all the plea we could make was—"*poor starving bees!*" They replied we ought to feed them, and thus keep them at home. In order to gratify their useless whim, and feeling that we might sometime regret we had not made an effort to save them, we commenced to feed extensively with sugar syrup. This we continued till about the middle of October, when the weather became too cold, and they would take no more. A good part of what they did take remained unsealed. But that was not the worst of it. So many of the bees had been *preserved*, *pickled*, or *burned*, that there was not a swarm which had a fair number left to begin winter with. Many of them had not a quart of bees, and I do not think that they averaged over two quarts to the hive. Consequently the first severe cold finished some of them; and though the winter has been mild, yet changes have been so numerous and great, that there has been a continual drain on their scanty stores and numbers; for there has scarcely been a week that they were not tempted to leave their hives, and always more or less fail to return. I dread to have spring come, when I shall have to witness the desolation.

Wm. M. Stratton.

West Troy, N. Y., Feb. 21, 1870.

P. S.—I always feel more interested in "facts and figures" than in anything else, and the more of them the better, and I think that J. H. Townley, on page 166 of the February Journal, has imitated the deacon in "spreading" on Judge Chapman's titles. I judge that in a revised edition he will be willing to reduce his 2,163 to the square foot by 2,155, leaving *eight* to the foot; and borrow a few bees to finish out with. But do not be weary in well doing, Mr. Townley, for the idea will lead to a fine train of thought respecting bee pasturage.

W. M. S.

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[For the American Bee Journal.]

Wintering Bees.

In nearly every number of the Bee Journal there appear several articles under the above or a similar heading. Some reporting their success, others their mishaps; some advising one method, and some another; some experimenting, sanguine of success; others mourning over their failures. I may be vain, and possibly conceited; but I cannot help smiling at this jargon of the doctors of apiculture, while my own bees are quietly sleeping away the long winter months, giving me no anxiety of mind, nor causing the slightest trouble. I put my bees into winter quarters, and go about my business, giving them no further thought till the bright sunny days of spring, when I return them to their stands full of life and vigor. If "Novice" had expended two hundred dollars in an underground room, similar to the one described by myself in the American Bee Journal, he would have no occasion to open the door at night or reconstruct ten years hence.

J. H. Thomas.

Brooklin, Ontario.

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[For the American Bee Journal.]

A Few Inquiries.

Mr. Editor:—I would like to ask friend Gallup a few questions through your Journal, as he is well posted on bee questions.

After taking out bees in the spring, would you keep the top of the hive perfectly tight and close, so as to keep all the animal heat in, to induce breeding more rapidly?

In case you have a light swarm of bees, would you use a division board and keep the space from being large, so as to create more heat?

Where do you have ventilation to your hive in summer? Do you have more of it than is given at the entrance?

Please reply, and oblige, Joel Dayton.

Decorah, Iowa.

[For the American Bee Journal.]

Bees in New Jersey.

Well, Mr. Editor, I've removed, bag and baggage, bees and bee-hives, and am going to try bee-keeping, here on the sands in the pine region of New Jersey. I hope to be able to give you a good account in the future. We have light land which is favorable for the production of honey, if covered with the right kind of vegetation. It has been my experience that bees work more than four times as much on clover growing on dry sandy or gravelly land, than on heavy clay or wet land. Some of the land here is too light, and much of it is not yet covered with the right kind of vegetation, as it is only four years since this section was opened for settlement. Most of the land was owned in large tracts; only an occasional farm having been cleared.

It may be said in our favor that we have a long season; and it will be seen, on looking at a map showing the isothermal lines, that we have a climate similar to that of some of the Southern States. We can raise sweet potatoes profitably; also peanuts, and some other southern productions. Fruit growing is the main business here, which will give an abundance of early blossoms; and I fancy that the raspberry will prove of value for its honey. Clover is not yet abundant, though increasing. We have also willow, locust and cherry; but I do not know of how much value these will be until I observe them one or two seasons. Buckwheat is raised, and is of value to the bees. I shall try melilot, mustard, borage and alsike clover, and if you can offer any suggestions of value to me, they would be thankfully received.

Appearances indicate that we shall have a long continuance of blossoms, though not very abundant much of the time. Whortleberries grow wild here in great abundance. Sometimes a hundred bushels a day are sent from this place to New York, for a week at a time. Some of the natives think the bees get a good deal of honey from the whortleberry blossoms; some think they do not; and others do not know what they work on except buckwheat.

Bee-keeping is at a low tide here, as is (or rather was) every kind of industry amongst the isolated rural population. The colony of fruit growers establishing themselves here have given a different *look* to this hitherto uninviting field.

Last summer I hived a small swarm, and in a few days found they were queenless, without a particle of brood. A few days later, on examining them, I found the work of a fertile worker or workers. As they had a young queen when hived, it would seem that this worker must have become fertile after being fully grown. I believe this to be the case generally, and that they need no previous preparation, such as being laid at the side of a queen cell, and getting some queen's food by mistake.

J. L. Hubbard.

Bricksburg, N. J., March, 1870.

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Colonies too feeble in numbers in the spring should be gradually reinforced by inserting maturing brood taken from strong colonies.

[For the American Bee Journal.]

A Simple Bee-Feeder.

Having used a feeder for two seasons past, made somewhat on the same principle as that described by NOVICE in the April BEE JOURNAL, I send a description of it, thinking it may be of use to some of your readers, as it is even more simple and cheaper than his.

Have a tin tube made, open at both ends, one inch in diameter at the bottom and one and three-eighths at the top, and three inches long. Now put two thicknesses of rather close woven linen or cotton over the smaller end; these should be about four inches square. Then push these (the tube with the cloth on them) down through one of the holes in the honey-board, until they will not go any further, and you will have a feeder which will hold plenty of food, for spring feeding, at a cost of two cents. To use it, pour your honey or syrup in the top, and it will drain through the cloth, one or two drops at a time, and be taken off clean by the bees, even if the weather is quite cool, as they need not leave the cluster to get at it. If you wish to feed heavily, you can put a feeder in each hole in the honey-board, making six to the hive.

Will NOVICE please consider his hand *warmly* shaken for what he says about OUR Journal, in the same article. D. M. WORTHINGTON.

Elkridge, Md., April 9, 1870.

[For the American Bee Journal.]

Foulbrood.

I had supposed that my article on foulbrood would wake up Mr. Quinby, or some one else. Had my colonies all been good full ones in the spring, or even in the month of June, I might have done as Mr. Quinby has advised on page 212 of "Mysteries of Bee-keeping;" but as my stocks were very weak—and all colonies would naturally be when diseased by foulbrood—I found it best to destroy hives and all.

Mr. Quinby desires to know if it was proper to jump at conclusions at first sight. Perhaps it was not; but then my experience for the next few months satisfied me that I was right. When it was my opinion that that was the trouble with the bees, why should I not call it foulbrood at first sight? I was no better satisfied one year later that my bees were foulbroody, than I was the first time that I detected that peculiar smell.

I think I missed it only in one thing, and that was by not destroying the two hives that I had purchased, as soon as I discovered that they were diseased. I would then have been only forty dollars out of pocket, instead of two hundred, as I was one year later.

If ever I have another case, I shall destroy hives, bees and all, at once; for I *know* this to be a *sure* and safe remedy. Mr. Quinby says—"a colony badly diseased in the fall is not in a good condition for winter. Such colonies at this season might as well be destroyed." And so I thought. Consequently I got rid of the bees, disease and all, and made quick work of it.

When but few colonies are diseased, why not destroy them at once, and have done with it? Of what use is it for any bee-keeper to experiment with this disease, when all who have been troubled with it meet with the same success, and know that the whole thing must be destroyed, sooner or later.

To any man who has read all or nearly all that has been written on the subject of bee-culture, and has had as many years experience with bees as I have had, and cannot tell at first sight when his bees are affected with foulbrood, my advice is to give up the business, as he will always have to depend upon what others tell him, and can never succeed, and ought not.

If any of the readers of the JOURNAL are troubled with foulbrood, let them test Mr. Quinby's remedy and then mine. I believe that nine out of every ten bee-keepers who will try both remedies, will wish they had done as I did in the first place.

H. ALLEY.

Wenham, Mass.

[For the American Bee Journal.]

Bee-keepers Hidebound, and Bee-keepers Liberal.

MR. EDITOR:—I am a careful reader of your valuable Journal. I long to have its numbers come; and would wish it to come weekly, instead of monthly. There is perhaps no one who takes a greater interest in bees than I do, and consequently all the information given by a host of correspondents of such eminent apiarians as grace the columns of your Journal, is duly appreciated. The writers belong to that class who are liberal and useful; who are not afraid to let their light shine. Their long and varied experience is duly regarded by all. There is, however, another class who are more narrow-minded and bigoted. Their selfishness precludes them from going into public print, except when they have some miserable make-shift, on which they have obtained a patent, and which they wish to puff into notice; or when other and more liberal men make improvements and publish them to the world, then they will rush forth like dogs with sore heads, growling and snapping at everybody, although there may be no infringement of their rights or claims. If all bee-keepers were as selfish and impotent, little knowledge indeed would we have. If every little improvement, fancied or real, would have to be patented, and all information withheld and hoarded up for a future volume, to be published for their benefit, little if any good would be the result. I do not discard books, neither do I undervalue their use; but this is a progressive age, and books may soon get behind the times. The only remedy is in a Journal. Let all good men rally to the work. Let all who take an interest in bee-keeping send in their communications; let bee-keeping be made co-operative, let all mutually help each other, and raise the standard of bee-keeping to what it ought to be and can be, even if the editor should have to enlarge his Journal again, let it be so. Let each subscriber procure one additional name to "the roll of honor," and all will go well. Let us not follow the example of a few of our bee-keeping friends, who keep all their experiments and the results locked up in their own breasts, to be there hoarded like the gold of the miser, and finally lost to the world. Such men are a discredit to themselves and to the community in which they live. I am only a beginner, and consequently have as yet nothing to do but learn. If, however, anything interesting occurs I will cheerfully report it.

Gebharts, Pa. W. BAKER.

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[For the American Bee Journal.]

Soil for Bees.

MR. EDITOR :—We want more of the experience of bee-keepers on the quality of soil as regards the yield of honey. (See BEE JOURNAL for March, page 179)

Alsike clover, grown on reclaimed wet meadow soil, of course it was rich land, as it yielded no honey. Page 183. Quality of soil for beekeeping. E. Gallup on manuring the clover pasture and currant bushes to increase the yield of honey.

Bees fly over fields of buckwheat to others beyond. It may be, in that case, that the flowers were not of the same age, or the soil alike. We have seen stock and bees pass over low, rich lands, to higher, dry and light soils, to feed on clover ; the season being wet and the growth of the plants large.

In June, 1868, we saw at Sterling, Ill., a field of clover, on a large portion of which the cattle refused to graze. Our attention was called to the curious case by Mr. Bressler. Will he please give the readers of the Journal the cause of the preference given by the cattle to a part of the field to the exclusion of the other part ?

J. M. MARVIN.

St. Charles, Ill.

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[For the American Bee Journal.]

Transferring Bees.

Several persons have asked me *when* to transfer bees, and *how* to transfer them. When to transfer them depends somewhat on circumstances. If I had a small swarm in a large hive, I should transfer early in spring, as my hive has a small frame ; because I could then get them in better shape to control the animal heat, and thus cause more rapid breeding. But to transfer into another hive of as bad shape, or even worse than the original, there would be nothing gained by transferring early ; it might, in fact, be an actual damage. The best time for such therefore is near the swarming time, or just before ; say, as soon as the hive is populous, and when they are gathering honey so that they can build comb, repair damages rapidly, &c. If transferred at such a time, it will put them back only a trifle. In fact, I have frequently transferred, when I thought it actually set them ahead. I have transferred at almost all seasons except winter ; but in all cases I knew what my object was, and understood the business.

Now for the *modus operandi.* In the first place, we want one hive all ready, and a dish full of small sized wooden pins of various lenghts from one to three inches. Then we want our frames with from one to three holes bored through each side, bottom, and top. These holes are to be bored with a small sized gimlet or bit, or punched with large sized brad awl. Now the pins must be made enough smaller than the holes to be pushed through easily with the fingers into the edges of the comb, because we may want to take these pins out after the bees have permanently fastened the comb in place. The next performance is to drum out the bees into a box, and drum them out thoroughly. Now set the box on the old stand, and split open the old board hive and remove the combs, one at a time, and transfer or fit them into your frames. To avoid robbers this performance should be done in a room or shop, with all the windows darkened but one. As fast as a comb is cut out of the old box, gum, or log (you want a cloth folded several thicknesses and laid on a bench, stand, or table, to lay your comb on, so as not to injure the brood or sealed honey) lay it on this cloth ; place your frame on the comb, and mark it, so as to cut the comb a little larger than the frame ; crowd the frame down over the edges of the comb, and pin it in its place. Then hang it in the place in the hive and serve another in the same way, until all are transferred. Place your brood all together in the same relative position that the queen would place it in, and not a comb filled with honey between two filled with brood. With the first swarm I transferred, I used the sticks or splints tied at top and bottom, as recommended in the bee-books ; but that the only one. As soon as your comb is all transferred place the hive on the old stand, and hive your bees into it. Mr. Adair, in the Annals of Bee-culture, gives this method ; but I did not learn it from him ; neither did he learn it from me. Your pins can be taken out, after the comb is fastened by the bees. E. GALLUP.

Orchard, Iowa.

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[For the American Bee Journal.]

Italian Queens.

Mr. Gallup has mentioned several times, in the BEE JOURNAL, that he purchased some Italian queens of an Eastern queen raiser that were not very prolific, short-lived, &c. I wish to inform the readers of the Journal that those queens were not purchased of me ; and I wish to say, further, that I warrant all my queens to be *fertile*, *prolific* and *pure*, and guarantee to give satisfaction in all cases.

I make it a practice every year to purchase several queens of the best queen breeders and importers in this country, in order to avoid in and in breeding ; and I do not allow *drones* to mature from those queens which I use to rear other queens from. I do not ship queens from my apiary until they have laid several hundred eggs. All the queens that do not commence to deposit eggs within forty-eight hours after being fertilized, are rejected. H. ALLEY.

Wenham, Mass.

THE AMERICAN BEE JOURNAL.

WASHINGTON, MAY, 1870.

☞ We give in this number a translation of that portion of the proceedings of the Nuremburg Convention of German Bee-keepers, which relates to the introduction of queen bees to queenless or deprived colonies, and will interest those of our friends who purpose procuring Italian queens for their apiaries this season. Also, the remarks on the requisites for producing early swarms, made by various members of that Convention on the ensuing day.—On perusing those articles it will no doubt strike the reader, as it struck us, that fully as great a diversity of opinion and practice prevails among the German "Imker," as among the American bee-keepers, though the former have had the topics much longer under consideration.

☞ The reports from Mr. Argo and Novice, of their "progress" respectively, during the past year, reached us almost simultaneously, though too late for our present number; as we regretted to find after making strenuous efforts to have them inserted. They will appear in our next, together with several other communications from old correspondents for which we expected to have room—the whole being already in type.

If queen cells be discovered in a hive having a fertile queen recently introduced and apparently accepted, they should not be destroyed, but the queen should be immediately removed, caged, and given to some queenless or deprived colony, or to a newly formed nucleus.—In such case there is usually an antagonistic party formed among the workers, bent on superseding the queen, and she is certain to be killed by them, sooner or later, if allowed to remain in the hive, even after all the queen cells have been destroyed.

Those who still use straw or box hives with fixed combs can, by the following method, prevent after swarming when a swarm has issued or been drummed out of a hive. On the day after teeting is first heard drum out another swarm, hive it, and set it at the side of or on the parent hive. In the ensuing night all the supernumerary queens will be destroyed and cast out, and the one selected and retained will in due time become fertile. Most of the bees of the driven swarm will gradually leave and return to their old home, even after their young queen has begun to lay. When her companions have for the most part forsaken her, this queen may be substituted for the one which accompanied the first swarm, and the old queen thus got rid of.

Mr. Uhle, of Roverido, in the Italian portion of Switzerland, whose advertisement appears in another column, was formerly Superintendent of Mr. Mona's apiarian Institute in Italy, and is known as a well-qualified bee-keeper.

Beer Law and Bee Law.

☞ In a recent case in the Circuit Court of Baltimore County, (Md.,) the Court held that—

"The defendant has the same right to sell *Tonic Beer* as the complainant has. But the defendant must not sell his Tonic Beer under such colors and representations as to induce the public to suppose that his Tonic Beer is the Tonic Beer of the complainant. That would be an imposition and a fraud on the complainant."—The Court accordingly granted a perpetual injunction, restraining the defendant from selling his Tonic Beer under false colors or pretences.

This being declared to be beer law, applicable as the Court said alike to Tonic Beer and "Day's Blacking or Rodger's Cutlery," we would kindly suggest to certain piratical parties—who boast that they are growing fat on the profits of practises thus emphatically denounced as an *imposition* and a *fraud*—to ask themselves quietly some cool evening, whether the same principle does not extend to matters coming under and embraced by what, dropping a letter, may be termed *bee* law?

We have received from the Hon. Horace Capron, Commissioner of Agriculture, a package of choice vegetable and flower seeds, for trial.

Erratum.—The board for the "ventilating button." of Mr. Crist, described on page 220 of our last number, should be three inches and seven-eighths ($3\frac{7}{8}$) long, and not three inches only, as there stated.

Correspondence of the Bee Journal.

East Hardwick, Vt., March 14, 1870.—Our winters here are very long and severe. Often we cannot get our bees out from their winter depositories until the middle or the last of April; and if not dead then, they are often very much reduced in numbers, from various causes. We have an abundance of dandelion, white clover, and raspberries, which are our main dependence. With strong stocks in the spring, we can get some surplus.—J. D. Goodrich.

Newburyport, Mass., March 14.—The communication of the 3d of January, which I addressed to you, on the subject of my first experience with bees, was done without premeditation, or even a thought of its finding a place in the columns of your invaluable Bee Journal. But as I wished to communicate about some other matter, I thought it might not be out of place to give, in brief, a statement of my bees, with others in general in this locality.

Assuming no selfish bigotry, simply claiming square honorable dealings in all my business transactions, I did so without prejudice or partiality. But it seems friend Alley is a little sensitive on this point, and with one sweeping remark contradicts the following statements : "I took them to the county fair and there obtained the first premium of four dollars. There were three or four old bee-keepers present with their experience and new style of hives, and friend Alley with the rest. All said that their bees did nothing this year." Now, if what I said was false; or if my personal character for veracity were as well known to the readers of the Journal as it is in the city of my adoption, perhaps I might forbear ; but, with your permission, I would like to examine the statements in question and see how far it was from being correct.

First. "I took them to the county fair and there obtained the first premium of four dollars." That I took my bees to the fair is too patent for any to deny, although it is a part of the statement which friend Alley says is far from being correct. That I received four dollars is also true, which I can prove by the City Treasurer, who paid me the money. That it was not the first premium is a quibble which I care nothing about, as it was the largest sum and I got the money. Two of the trustees say it is the same thing but of a different class. The discrepancy in the two statements may require a little explanation. Immediately after our county fair the Newburyport Herald published the list of premiums and gratuities. I had several varieties of pears entered—my brother had none, but two of the premiums were awarded to him. I went to the Herald office to have it corrected. The editor said it was a mistake which would not affect the report of the Society. Also, the report on bees and honey were made each for D. T. B. and D. C. B., and $1, each, for Mr. Alley and Mr. Green. I mention this to show that there was an error in the account of pears, and I did not know but there was on the bees; for when the awards were paid to the parties in this city (arrangements having been made by the Society for the Treasurer of Newburyport to pay a part of them), I went for mine and found that the Treasurer was authorized to be governed by a report furnished to him by the Agricultural Society, and in that report my bees and honey were awarded four dollars and D. C. Batcheldor nothing, Mr. Green and Mr. Alley one dollar each. These are facts, and I would ask in all candor, how far my statement was from being correct.

Second. That Mr. Alley should deny that there were "three or four old bee-keepers present with their experience and new style hives, and friend Alley with the rest," is impossible, for his own article, on page 196, acknowledges it.

Third. My reasons for saying—"all said their bees did nothing this year," was from what knowledge I had obtained from bee-keepers during the past year, and I had no small interest in that direction. I was at my brother's place several times and saw his bees. He invariably said that his bees were doing nothing, or to that effect. He had four swarms and only one cast a swarm last year (1869). From the other three he got no surplus honey ; the one that cast a swarm, was storing some honey, but not much. Mr. Calvin Rogers resides some four miles from this place in West Newbury. One day last August I drove to his farm on purpose to learn what his bees were doing. He had some thirty stocks and they had cast only four or five swarms and had collected but little honey. Mr. Hiram Rogers, of West Newbury, was at my place, and represented the same about his bees. Mr. J. L. Newhall took but one box of honey from his two stocks of bees, and they cast no new swarms. Capt. Davis Wood, Mrs. W. C. Morse, Mr. Amos Coffin, of this city, got neither swarms nor surplus honey. Mr. Noyes, of Seabrook, where friend Alley has been, inserting queens and dividing swarms, I have not seen ; but I have seen several of his neighbors. They say he had poor luck the past year. Mr. Alley was at my place twice last season. The last time he was there, he said that my bees were doing better than his. I submit, Mr. Editor, why should I not say to you that their bees did nothing this year ?

So much for Mr. A.'s assertions. Now let us see how it is with his statements. He says :—"Mr. D. C. Batcheldor, of Newburyport, brother of the gentleman named above, had a stock of bees on exhibition in one of my new style Langstroth hives. Last season (1869) they stored at least forty pounds of honey in small boxes." They did not store that amount by more than one quarter part. My brother told me so within one week. And this is not all. He had old comb in his boxes, for which his own word is my authority ; whereas, in mine every particle of comb was made the past season. Now, Mr. A. says—"On the first day of June one of the combs in the brood box broke down, and destroyed more than two quarts of bees." Perhaps he may intend this for an advertisement to sell his new style of hive, as he is very anxious to introduce them. I would say, for his benefit, that they do not all do so, for my brother had another swarm in the same style of hive, that did not break down, neither did it cast a swarm or give any surplus honey. Mr. A. also says, "this hive was exhibited with all the boxes in it, but had the outside case removed so that the boxes could be seen, and all of them (36) had more or less honey in them." Now, what does all this amount to, when we take into account that they are three pound boxes and not to exceed twenty-five pounds of honey. A few of the front boxes were sealed, but the great majority of them had little or no honey in them. They could not be weighed with any degree of accuracy, and never were. Mr. A. says, "the sum of six dollars only was divided between four bee-keepers, and this was only to partly pay for the trouble of putting the bees into the hall and taking them out again." Singular enough ! I wonder if anybody else ever got that idea through their cranium ! Mr. A. came all the way from Wenham, by rail, some sixteen miles, and Mr. Green, from Amesburg, some five miles, or more, and each received one dollar, as part pay, while parties within two gunshots of the hall got four dollars, as though there were no other merits in the case. Preposterous ! Mr. A. says "D. T. Batchelder received two dollars." This is not correct as I have shown. D. C. Batchelder says he has not yet received anything. Mr. Alley says he has. Which would be most likely to know, I will leave for your readers to decide.

I would like to see a statement in the BEE JOURNAL of what friend Alley's bees have done the past year, to let its readers know what kind of show he can make.*

Now, Mr. A. when you try again, be careful that you do not wake up the wrong person.

So, hurrah for the BEE JOURNAL ! A statement of facts and a backbone to back them.

N.B. I think my bees have been brooding the past winter. Toward the last of January, on warm sunny days, bees two-thirds grown lay at the entrance of the hives. Is this common ?—D. T. BATCHELDER.

ALLENSVILLE, (KY.) March 16.—My bees are in fine condition, having passed the winter on their summer stands, and are breeding rapidly. Last year was a good season in my locality.—J. H. JOHNSON.

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* Mr. Alley's business is mainly to raise Italian queens, on an extensive scale ; and of course his apiary could not be expected to make a large show of honey.—ED.

Salem, Ills,, March 24.—I have taken my stocks out of their winter quarters. They are very lively, and gathering pollen rapidly from the maples, &c. I have a number of hybrid stocks, and am anxious to get the full blood as soon as may be. I think when the people see the benefit of papers in the increased yield of honey; in the beautiful yellow workers; and in the security against loss of queens or damage from the moth; they will think a two dollar investment for the Bee Journal will pay them.—R. W. Pratt.

St. Catharine's, Canada, April 4.—My bees have wintered splendidly on their summer stands, thanks to your valuable paper, while black bees all around me in every direction, for scores of miles, have gone (as Jim Fisk says) "where the woodbine twineth." I wish the A. B. Journal came, as Sunday comes, once a week.—O. Fitz Wilkins.

St. Charles, Ill., April 9.—We finished setting out our bees on the 6th inst. Loss less than ten per cent. Stocks the strongest for several years. We have sold the balance of our comb honey at 25 cents per pound and the extracted at 20 cents. At this price, will it pay to use boxes? The honey extractor has been a great help towards the well wintering of our bees.—J. M. Marvin.

Lewiston, April 8.—Who has catnip seed for sale? I have tried the bee-feeder described by Novice in your April number, and it works splendid. Many thanks to Novice.—H. Libby.

Charleston, Ill., April 9.—Allow me to say that yours is the ablest and by far the most reliable bee paper I have yet seen, and I am inclined to give it as my opinion that the "American Bee Journal" will survive the day of mushroom publications, and stand the more firmly when the storm shall have passed, *by reason of the opportunity of comparison*.—H. C. Barnard.

[For the American Bee Journal.]

Wintering Bees.

Mr. Editor:—I am still of the opinion that bee-keepers should give their experience every spring in wintering their bees, the number of hives, the kind of hives, kind of bees, where kept, and the results.

I am well satisfied that the only true policy in wintering bees, is to put them in some kind of suitable winter quarters. I have a double-walled house, built of good pine lumber, tightly battoned, with good shingle roof. It is twelve by sixteen feet outside, with two feet space between the outer and inner walls, filled in tightly with dry straw all around and overhead; a room cut off four feet in front for keeping tools, honey boxes, &c., with double doors in front, and ventilated by two zinc tubes, two inches in diameter, through the walls, opposite each other, on the east and west sides, with a ventilator six inches square through the roof, making a room eight feet square inside, dark as midnight, and of a perfectly even temperature.

Into this house I put sixteen colonies of Italian bees on the 27th of November; seven of them in Langstroth's shallow, movable comb hives, four in the Hotchkiss dividing hive, three in deep movable comb hives, and two in Eddy box-hives. At the time I put them in, one in a deep frame hive was weak in bees, and one in the shallow hive short in stores. I took out all the honey boxes, but left the honey-boards on, and set them in rows, one on the top of the other, three and four deep; lifting the top cover of the Langstroth hive, and inserting a stick half an inch thick for ventilation, and opening the doors of the remainder about the same distance. Here they were left undisturbed all winter.

Now for the result. On the 25th of March, which was a nice bright day, I brought out five of them, two of the deep hives, and one of each of the other kinds, and on opening them found they were in the finest possible condition, with scarcely any perceptible diminution of stores, much stronger in numbers, and with plenty of eggs and young bees in every stage of development. The one that was weak in the fall seemed as strong as any of the others. I was perfectly astonished to see many young bees with apparently so little loss of honey.

The next day, and as the weather permitted, I removed all the rest and found them as lively and brisk, as if they had only been resting over night, and on bringing out my meal trough well supplied with finely chopped rye and oats, they "pitched in" as though they were determined to carry box and all away.

Now I want to hear from all our beekeeping friends who read the Journal. Give us your mode of wintering, with all the particulars connected therewith. It seems to me that this would be productive of great good to young beginners. We might learn much from each other's experience.

I cannot tell why it is but I have somehow become warmly attached to the Bee Journal and all its correspondents. They all seem like old acquaintances, yet I have never seen one of them; but I love beautiful little bees and every one who takes an interest in them.

Geo. Hardesty.

Malvern, *Ohio*, April 2, 1870.

[For the American Bee Journal.]

Gallup on Hives.

On page 172, February number, Mr. L. M. Lindley wishes to know what Gallup thinks of his form of hive for Minnesota climate; and as he acknowledges himself a new beginner, suppose Gallup has a little talk with him about hives, through the Bee Journal, for his benefit as well as the benefit of others.

In old box hive times, a circular hive, about twelve or fourteen inches high and twelve inches in diameter, in the clear, or inside measure, would produce more bees than any other form of hive I ever saw. Queens would commence breeding earlier, breed more abundantly, and they would send out earlier and larger swarms, and more of them than any other form. A hive two inches less in diameter, and enough taller to make the same capacity, would not come up to the above; and a hive two inches larger in diameter and ten inches high, did not prove satisfactory.

From repeated observations, I have found that a good average swarm of bees, in cold spring weather, occupies (together with their comb) a circular space equal to twelve inches in diameter, when in the right form of hive to allow them to cluster naturally. Now, if we take it for granted that my conclusions are correct so far, we can easily see that any great departure from this form is wrong, for a cold climate like Minnesota. A correspondent who stated, in the BEE JOURNAL (about the time that Gallup was having his awful muss about hives), that he used the shallow hive, and that he wanted no other, finally concluded to try a different form, and still call it a Langstroth hive. He wrote to me last spring, and acknowledged that all his swarms in his new style hive were at least twenty days ahead of those in his old style of Langstroth hive. While his new style was full of brood, his old style was just commencing to breed; consequently his new style hives, in the same yard and with the same care, were ready to divide or swarm twenty days earlier than his old style hives. In my experience (and understand my experience has always been in the North) the difference has ever been from twenty to thirty days in favor of a hive of the right form. In Minnesota, your springs are always cool and windy, until about the first part of June, especially in the open prairies.

There are a great many people who have always used box hives; and when they first obtain a frame hive, they like it so much better than the box hive (without any regard to what the form may be) that they think their form of hive is the best in use; while the fact is, they are not competent judges. We can only arrive at safe conclusions after experimenting, for a series of seasons, with differently formed hives.

In transferring from hollow trees, and from all kinds of box hives, of every conceivable form, I have always noticed that there was only about from ten to twelve inches in depth of comb occupied with brood, except in rare cases. If a large quantity of brood is expected early in the season, our frames should not be so broad that the bees cannot occupy the full breadth of the comb from outside to outside.

E. GALLUP.

Orchard, Iowa.

[For the American Bee Journal.]

A Queen among Fertile Workers.

Last summer, after asking my "five questions," I introduced a small, black virgin queen into a colony of many fertile workers. She was kindly received and protected, the workers at the same time continuing to lay. Being encouraged, and yet not wishing to retain the black queen, I ventured a little further; and at the end of four days introduced a *fertile* laying Italian queen. She was also received and protected. She laid eggs liberally in one part of the hive, and the fertile workers laid in another part for five days, then the bees *carried out alive* the laying workers, and the queen and colony went on all right.

J. W. GREENE.

Chillicothe, Mo., April 10, 1870.

[For the American Bee Journal.]

Black Queens from pure Italian Brood!

Last fall I raised several nice queens *as black as a crow all over*, from the purest Italian brood, and other ones of the most beautiful golden color, on the same combs, at the same time. I presume there is no nicer queen or better marked workers in all the country, than the mother and worker-sisters of these jet black queens. I am positive that the worker sisters of these black queens carried in pollen liberally at fourteen days old. I did not save the black queens, but their queen sisters of the same age bring on pure worker progeny.

Has any one else had similar experience? Will some one explain? J. W. GREENE.

Chillicothe, Mo., April 10, 1870.

[For the American Bee Journal.]

"All Aboard!"

On the Great Apiarian Railroad they now run two trains:—

The 1st, or EXPRESS, with conductors Gallup and Novice, who believe there has been improvement in the past, and are for progression in the future, in all that pertains to the science of Bee-keeping, Bee Hives, Bee Management, Wintering of the Bees, improving the breed, and improving the practice. And—

The 2d, or WAY TRAIN, with mixed freight and sleeping-car. This carries all bee-keepers who believe in box hives, fixed frames, tight tops and side-doors; and that there has been and cannot be any improvement in bee-keeping, bee management, bee hives, bee moth-traps, bee feeders, or in wintering bees.

Among the passengers on this train too are those who believe, "or would make others believe," that an artificially raised queen is never consumptive or asthmatical, nor ever has atrophia, scrofula, or nervous debility, nor proves sterile, or miscarries; and that when such queens are *large* and look like a *splendid* FERTILE queen, they never have the dropsy or colic, or are not badly constipated, with general debility of the vital powers, and are worthless—except for the five or twenty dollars they bring their *breeders*.

This slow train also carries all who believe bee-keeping has not improved in the last twenty years, since I went into it; are still quoting from their note-books of twenty years ago, and defending exploded theories—because, under the light of science, they once advocated certain standard hives and systems of bee management. They persistently stick to the theory, hive, and management, because in a past age it was thought good; and will not heed the wreck of fond hopes and the loss of millions of money it has caused, but adhere to it even in the light of present truth, because they think that to be consistent, they must advocate it in the future as in the past.

All such Rip Van Winkles in bee-keeping have secured berths in the sleeping car to the end of life's journey. J. M. PRICE.

Buffalo Grove, Iowa.

AMERICAN BEE JOURNAL.

EDITED AND PUBLISHED BY SAMUEL WAGNER, WASHINGTON, D. C.

AT TWO DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

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The Egyptian, the Grecian, the Italian and the Common Bee.

Translated for the American Bee Journal.

At the late general convention of German bee-keepers, in Nuremburg, Mr. Vogel, of Lehmanshöfel, stated as the result of his experiments and observations that, in his judgment, the common and the Egyptian bees are what he designates as *primary* races, while the Italian and the Grecian are mere varieties, or breeds produced by crossing the two primary races.

I am not myself acquainted with the Egyptian bee, but from the Greek and Roman classics and the known source and course of civilization in ancient times, I had, long before I saw Mr. Vogel's remarks, come to the conclusion that the Italian bee is simply a cross between the Grecian bee and the native or common bee of Italy, and that the latter was probably essentially the same as our common black bee. Again, I conceived that the Grecian bee was itself a cross between the Egyptian bee and the native bee of Greece, which presumably also did not differ much in appearance and habits from our common black bee.

There is no doubt that the Romans derived their knowledge of practical bee-culture from the Greeks. Varro, Virgil, Columella, Pliny and Palladius, knew little about bees which they did not learn or copy from Aristotle. But the Greeks surpassed the Romans, not only in science and theory, but in practice also. Hence, honey procured from Athens, from the Grecian archipelago, and from Sicily—which, like the whole of southern Italy, was populated by Greek colonists—came to be regarded by the discriminating taste of the Roman epicure as much superior to any other. What wonder then, since dainties were prized, sought for, and liberally paid for in the Roman capital, if Grecian bees were early transported to Italy, and that special pains were taken there to preserve in its purity a race believed to produce a honey finer in quality and sure to be more remunerative in price.

The Greeks, on the other hand, derived their culture and civilization mainly from Egypt. Think of Danaus in Argos, and Cecrops in Athens; remember the similarity of the mythology and religious culture of the two countries, and call to mind the active commercial intercourse early and long subsisting between the chief cities of Greece and the port of Alexandria; consider the fact too that the Grecian myths and traditions refer the introduction of the honey bee from the island of Crete, fronting the coast of Egypt, and that, in the most ancient records of Greece, the superstition which ascribes the origin of bees to the putrefying carcass of an ox or a heifer, is clearly traceable to Egyptian sources, and the striking circumstance, also, that an imposture so egregious, which none but a crafty deceiver could have devised to gull gaping credulity, was fully believed by the then most highly cultivated people on earth, and it becomes evident enough that the Greeks regarded the Egyptians as unimpeachable authority in all that relates to bee culture.

Hence, though it is nowhere expressly stated that the Greeks crossed their native bees with such as were imported from Egypt, or that the Romans carried the *improved* race from Greece to Italy, we can hardly avoid assuming that, in the ordinary course of events, such was the fact, and Mr. Vogel may well regard it as a confirmation of his deductions and views, though thus elaborated by a different process.

More assured certainty as to this might perhaps be attainable could we compare the Egyptian and the Grecian bees with the description of the honey bee—native or foreign—as it is given to us by the Roman and the Greek writers respectively. Perhaps Mr. Vogel has already in store, as the result of his investigations and observations, the requisite material for such a comparison. If so, he would contribute greatly to the further and more satisfactory elucidation of this interesting topic, by communicating it for publication.

SEEMAN.

Neisse, January, 1870.

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The field on which bees are fed is no whit the barer for their biting. When they have took in their full repast of flowers or grasses the ox may graze and the sheep may fatten on their reversions.—*Purchas.*

The Past and the Future.

Translated for the American Bee Journal.

At the opening not only of a new volume but on the twenty-fifth anniversary of the establishment of the Bienenzeitung, the editor and his respected correspondents may well look back with gratification on the results attained by their conjoint labors. During the period just elapsed bee-culture has been advanced both in theory and in practice, more than in centuries previously. Specially important for theory are the truths evolved by investigation and amid manifold controversies. When the Bienenzeitung was started many important points were still involved in obscurity and doubt. The origin and fertilization of the queen; the origin, purpose and sex of the drones; and the existence of fertile workers, were all still subjects of debate and controversy, and opinions or notions regarding them were entertained and advanced, of which the veriest tyro in bee-culture would now feel ashamed, since the truth has been so clearly elucidated. The change became possible only when by the publication of the Bienenzeitung a medium was provided through which the observations of numerous careful investigators could be made common property, and a general interchange of sentiments effected among bee-keepers. If the Italian bee has contributed greatly to dispel the darkness in which many points were shrouded, to the Bienenzeitung still pertains the credit of having first directed attention to the fact that the yellow-banded bee might be used for many interesting and instructive purposes. Had the first communication of Captain Baldenstein respecting the Italian bee, not found a place in the Bienenzeitung, that bee would hardly yet have been introdced into Germany, or as extensively diffused as it has been.

But not less great and gratifying is the progress that has been made in the sphere of PRACTICE. *Progress in theory is necessarily followed by improvement in practice*, whatever method be employed. And here again the Bienenzeitung, by innumerable hints, suggestions, explanations, descriptions and elucidations, has contributed essentially to the dissemination and elevation of rational bee-culture, not only in Germany but also far beyond the borders of that country.

In view then of what has been accomplished, shall the Bienenzeitung—in the spirit of him who when asked, a quarter of a century ago, to become a colaborer in the good work, excused himself by pleading indisposition, and saying that it was *not likely that any one could teach him aught new in bee-culture*—exclaim "It is finished," close the volume and repose on the laurels it has gathered. Ah! no! Man's true duty is to strive perpetually for the attainment of greater perfection, and the maxim—"He who does not advance retrogrades"—finds its application in bee culture also. There is many a veil yet to be lifted, even in the THEORY, and many a problem still to be solved in PRACTICE. We are still ignorant, for instance, of the source and cure of foul brood—that dread disease, the greatest calamity that can befall us in bee-culture. Nay, even the problem how the simplest and best hive may be constructed, is not yet satisfactorily solved, and for the purpose and in the hope of advancing *this*—one of the most important in practical operations—somewhat nearer to solution, I will shortly submit some remarks on the construction of a hive embracing the utmost possible simplicity combined with cheapness and adaptation.

DZIERZON.

Carslmarkt, December 18, 1869.

[For the American Bee Journal.]

R. M. Argo's Report, &c.

As April 10th was the day agreed upon between Novice and myself to write our reports of last year's operations, and as that day comes on Sunday, and I, being a Sabbath keeper, never write on that day, will have to write to-day, the 9th, because to defer it until Monday may be too late to reach Washington by the 15th, considering the distance at which I live, and I will not bother you with communications coming too late.

On page 14, July No., vol. 5, it will be seen that I began the spring with thirteen weak stands; and on page 61, September No. of same volume, I had fifty-two stands up to July 7th. The last swarm, put in the old round gum on that day, went up during the first cold snap in November, leaving the hive half full of nice worker comb, uninjured by the moth, but no honey. My impression is that they deserted, as no bees were in it when discovered, which was while fixing up for winter. This, with the exception of a third swarm, late in June, lost in March, is all the loss I have sustained for the past three winters. Presently I shall say more of those I lost.

As to the amount of cap honey, I tried to keep an account, but some was fed to weak swarms in the fall, and some given away, forgetting to weigh, so that the nearest figure I can arrive at is 420 lbs. Some, not included in this weight, was made in full length frames in the top of other hives, and given to late frames. No feeding was required through the winter, neither in the spring, only for stimulating breeding. All the stands, with the exception of perhaps about a dozen, have too much honey. Had I a melextractor I might safely take away from 200 to 400 pounds, with great benefit to the bees, as will be shown presently. I must have a melextractor, I am only waiting to get the best, which is always the cheapest, no matter what it costs. But as everybody thinks he has the best in use, how am I to find out where to get the best? If Gallup knows the truth he will tell it. He keeps nothing back that will advance the good of bee-keepers.

I commenced feeding rye flour February 10th, and fed two bushels to April 2d. No natural pollen was gathered until this week, as nearly all the winter we had was from February 18th to April 5th. All stands worked freely on rye flour, except No. 27. I examined that one on the 12th of March, and found plenty of drone eggs but no queen. Supposing that they had a fertile-worker, I gave them a frame of brood to raise a queen, taking away the drone brood. On the 22d I found no queen cells started, but a fine large queen, a drone-egg layer. I removed her and gave them another frame of brood, from which they raised a fine queen in fifteen days. I had found a drone in this stand on the 12th of March, and found the same drone laying dead at the entrance the day after the queen was hatched. I fear I shall not have drones for two or three weeks yet for this new queen.

March 25th discovered another stand (No. 7) that would not work on rye meal—a third swarm put in June 22d. The hive was a box 10 x 10 x 12 inches, with a flat board in the middle, five inches wide. This stand showed every sign of a prosperous swarm until discovered; on turning it up two large sheets of sealed comb dropped out. The day being warm I gathered them up in haste, to prevent robbing, carried the hive to a room and took out all its contents—29 pounds of honey, a teacupful of bees, and no queen. There was not more than a foot square of empty cells altogether; sealed honey down to within five inches of the bottom board, and most of the lower part filled with bee-bread. Had they been in a frame hive I could have known their condition and might have saved them; but in the condition they were in, with so much honey in the way, even Gallup or Grimm would have fared no better. I put them in that for want of a better, that is a frame hive:

I have now forty-two stands to begin with. I gave away three last summer and sold five, which makes the number fifty. I had almost forgot to say that I have wintered successfully a small nucleus in a nucleus box, five inches square, as follows: One of the boxes was twelve inches long—I united the bees of two others, and set the two boxes directly on the frames of the long one, and enclosed the whole in a large box with a five-eighth inch augur hole for entrance, stuffing dry straw around between. In this way they have wintered first-rate, and are breeding fast now.

We have no bloom as yet, except the elm trees, and a new sort of plant that has come up very thick in a vineyard not over 200 yards from my bees. They are at work on it very thick, especially in the early part of the day, when warm enough. As no one here knows anything about the plant, I will enclose you a specimen. It grows about six inches high and very much resembles catnip. The red bloom is very thick. I do not know how long it has been in bloom, as my attention was only called to it yesterday by the bees being so thick over the vineyard.

I suppose my report is full enough for the columns of the JOURNAL. Now, while I am writing, Novice may be looking at his bees, thinking which stand to put his new queen from Argo into. I wish him great success, but especially to AMERICAN BEE JOURNAL, which makes no promises that it does not fulfil.

Lowell, Ky., April 9, 1870. R. M. ARGO.

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In 1866, England imported 13,521 cwts. of honey, and exported 1,920 cwts.

[For the American Bee Journal.]

Novice's Report, &c.

DEAR BEE JOURNAL:—In accordance with Mr. Argo, we proceed to report the state of our apiary, compared with what it was last year at this time.

As we have before stated, we were reduced to only eleven stocks by that "bee disease," before we could get them at work and healthy again; and of the eleven, not one was a full colony. In fact all of them would not have made four *good* colonies, and one of the eleven queens was killed by an experiment in introducing about the forepart of May; but as that was clearly bad management, we suppose our starting point will be called eleven stocks.

We have now forty-six, all with fertile queens and brood, in a prosperous condition, (as we overhauled them in order to be certain,) with the exception of one queen, which we found had produced nothing but drone brood in worker cells with raised caps. We removed her about March 20th, and gave the colony worker brood. They immediately started queen cells, and now have a young queen, which was out to-day, (April 10th,) with the small drones, but we think was not fertilized, as it was her first flight. As the colony is quite populous, we think we shall have no trouble in keeping them up to the standard.

We will confess to you, Mr. Editor, how very near we came to having only forty-five stocks. After removing our bees from the house, March 10th, we had some of the coldest weather of the whole winter, viz., two degrees below zero. We confess it was with a little feeling of nervousness that we went round and gently tapped on each hive. Those that we feared most were tried first, of course; but when *they* all answered promptly "*all right*," we began to breathe freely, and only thought we would go to the whole, to be positive and no mistake. But we went down to zero ourselves, and no mistake, on finding that one of our heavy hives, when rapped repeatedly, gave "nary" response. "'Twas indeed too true."

With a nerve of iron and a face pale as ashes, we boldly grasped the hive in our arms, and rushed madly for the kitchen stove. (Copyright secured for above.)

With breathless sorrow we hung over that little domicile, where only the night before was the happy hum of peace and plenty. All now was still. No little yellow bodies moved so softly and quietly about, (they were full blood Italians;) but all was cold and frosty in death.

One side of the hive had plenty of sealed honey; but they had eaten along to the other side, and relentless zero found them consuming the last on that side. We warmed them and *re-warmed* them, but not a movement, until after an hour or two, a very few stirred a little, but that was all. We began to think we must give up as we had tried the same thing last year, when they all soon played out again. Our presence, too, was beginning to interfere with the preparations for the noontide meal; but we could hardly give up yet. We lifted our hive again, but this time with less determination than before, and slowly wended beehouseward. We built a fire in our little stove, got two chairs, hung our coat on a peg after we got up a summery temperature, and forbade interruption.

We opened the hive, brushed the bees into a large pan—all we could get out of the cells, and warmed and warmed them. No use, only a feeble movement occasionally. At length the sun came out, and full and warm his rays came through the frozen air into the single beehouse window. We put the pan on the window sill, to aid us in looking for the queen we had not yet found. Was it our imagination, or was the sun *really* reviving them? They were certainly now coming to, and we certainly were smiling. After sprinkling them with honey and water, they got brisk apace, and on standing a comb up in the pan, they crawled on it as fast as they revived; and those in the cells towards the sun began to "wriggle" out. Before night we had the whole colony back *in statu quo* in their hive; and their pretty little yellow queen is now enlarging the circle of worker brood with all the matronly pride imaginable. So you see we "licked" in the race of life and death, and have our whole forty-six all right!

Mr. Editor, we have almost a mind to feel saucy on the subject of wintering bees; but we don't think we should again remove them so early as on the 10th of March.

The "Apiculturist" (the new Journal on Bees we mentioned) has made its appearance. We have no time to notice it now, more than to mention that in one of its leading articles, we find the strange assertion that the Baron of Berlepsch proved by *direct experiment that drones raised from fertile workers and unfertilized queens were incapable of fertilizing queens.*

Would it not be better for them to wait a few years and get "somewhat better posted," before starting an "Apiculturist," and having such a blunder as the above in their first number? Many of our own correspondents would write quite differently, if they would carefully read the Baron's experiments in the *first volume* of the AMERICAN BEE JOURNAL. Let those who run their heads so strongly in the dark against Dzierzon's theory, inform themselves a little more, or give us the result of some direct experiments.

Our experience has satisfied us many times over that fertilization of the queen *does not* affect her drone progeny, as wiser heads than ours had told us before; yet every little while some one (dare we say new beginner) starts a long-winded theory, to show that it can't be so. Make some direct experiments of your own, and it may save exposing your ignorance to the rest of the world.

Adam Grimm mentions one experiment that seemed to throw doubt on a drone-laying queen's progeny being capable of fertilizing queens. Yet we have so many experiments that have seemingly proved the contrary, that we must think his, in some way, an exception. The case of our own just mentioned, we think, will be a pretty fair test, as there are no other drones nor drone brood in any of our hives, and certainly nowhere else at this time of the year.

One correspondent reasons from analogy, and cites common fowls. Does he forget there can be no comparison, as bees are entirely different in their mode of reproduction, and we might add different from all the rest of animated nature. Poultry was once our hobby, and we think a careful perusal of that part of our poultry books that treats of keeping the several breeds pure, will make clear to him a point that he does not seem to understand exactly.

The first and second volumes of the AMERICAN BEE JOURNAL, we think, will satisfy any one, or at least show them how they may satisfy themselves by experiment, that fertilization does not affect drone progeny.

We have seen part of an article on wintering bees, taken from the AMERICAN BEE JOURNAL, and copied in *two* bee publications and *three* agricultural papers, none of them acknowledging where they got it, nor seemingly having sense enough to know or mention that the article was written for the climate of Germany, and that taking a *part* of the piece only might grossly mislead the uninformed. It is to the effect that wintering in special repositories is superfluous and an injury, and that *seven pounds of granulated sugar are amply sufficient, with no stores, for out-door wintering.* Could they have copied anything of less importance or calculated to make more mischief if they had tried?

Our bees are now carrying in flour gloriously, they have used up all our rye and oat meal.

And what do you think? We have just had a new circular saw mill started here, and the Italians seem to take full as deep an interest in it as anyone else. As soon as a pile of sawdust was made they evidently seemed to think it a huge pile of meal gotten up expressly for them; and the little fools have not yet (after four days) discovered the difference, but are as busy as possible, bringing home huge pellets by thousands. Is it possible that they can really make any use of it, as they do of meal? We are going to try and find out ourselves, as it is a "heap" cheaper (or a *heap* would be cheaper) than wheat flour, or even rye or oat meal; and they seem to work on it almost as well.

Oh, Mr. Editor, you was to decide who merited that queen, for greatest proficiency in "bee husbandry." Supposing we have both merited one, it don't seem hardly right to take one away from the party that has made the least progress. However, we are content to abide your decision; should you even think proper to give us one each from your own apiary, *we* would not complain. Certainly not. NOVICE.

P. S.—Perhaps it might be well to state just how we came by that drone-laying queen. In August last, to give our Italians room, we put six frames of brood and honey in an empty hive; intending to have them raise a queen. But just then a small afterswarm of black bees, probably starved out, came along, trying to get in some hive in our apiary, as they often do (and this at times when Italians are building combs and storing honey): and we caught their queen, and put her bees and all into an artificial stock, which soon made a fine colony. In September, as drones were still flying and Italians at work, we raised three fine queens, or rather two fine queens and one cell that had not hatched. As it was Saturday night and we were in a hurry, we hastily removed our black queen, put her in a cage over another hive, to save her in case we needed to return her, and simply laid the queen cell on top of the frames (the bees soon cover it, and it is just as well in warm weather, and can be examined at any time without opening the hive). The next day we were on the watch, and saw a fine queen hatch out and go down into the hive well received.

Of course we should have looked after this hive further; but as the two other queens of same age became fertile, we neglected to examine the hive again until the spring, when we found a black queen and drones in worker cells. Of course our Italian queen was lost or killed, and they raised one of their own too late to be fertilized. The drones are quite small, scarcely larger than a worker. Another fact for the bee-house—the colony is now quite populous, although it has had no fertile queen since last September. Had it been left out of doors, how would its condition have been?

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[For the American Bee Journal.]

True Theory of Bee-Culture.

Mr. Editor:—The published report of the profits of N. C. Mitchell's apiary, in dollars and cents, for the year 1869, which appeared in the first number of the Illustrated Bee Journal, has created quite a sensation in *Beedom* in these parts. The illiterate generally discredit it; the mediocre is taken aghast; while the would-be knowing ones are completely knocked off their pins. But, Mr. Editor, I believe every word of it, although at first, I must confess, I was considerably exercised, as it was such a *big* step in advance of anything of the kind ever before given to the public, and so completely upset and cast into the shade the most extravagant reports of even those whom, from their long experience in the business, and their oft repeated practice of coming before the public as models and instructors in the art, one would have supposed had reached the acme of perfection. But this is an age of progress and reason, or, as a quaint writer pertinently observes, "an age of steam-cars and telegraphs." Rapid strides are being made towards the perfection of science and diffusion of knowledge. The importance of practical light in the great work of ameliorating and improving the condition of man, is beginning to be seen and appreciated. The cause of truth has suffered much, in many departments of science, from a system of practice, the principles of which, depend more for their validity on the fruitful imagination of an infatuated brain, than upon that order and relation established by the Creator himself.

In no department of rural economy has this fact been better exemplified than in the science of bee-culture. While scientific men in all ages and countries have puzzled their brains to discover the modes of action that govern the growth and economy of vegetation, in order to improve the art and science of husbandry, apiarian science, the most interesting and profitable of all rural pursuits, has been involved in comparative obscurity. Though a few important advantages have been secured, by a better adaptation and arrangement of the domicile or habitation of the bee, to the natural habits, wants, and instincts of that insect, the true theory of bee-culture, in accord with the natural system presented to our view in the order and relation of principles established by God himself, and producing their results according to that order, has never before been correctly understood. The term science, technically considered, means a system of first principles or elements which, as a whole, compose the foundation of that system, whether in the animal, vegetable, mineral, intellectual, or moral kingdom. But science, taken in the true signification and meaning of the term, denotes a knowledge of these principles with regard to their active and operative powers, and their relations to each other, in maintaining the economy and harmony of that system, together with a knowledge of the effects which would result from their regular and uniform operation.

He who would succeed in directing and shaping the action of a colony of bees so as to secure the greatest amount of profit, and proceed with a certainty of success, must study and apply that system of principles which constitutes the foundation on which bee-culture rests. In the application of these principles he should possess sufficient tact and judgment to enable him to vary their application so as to reach the exigencies of each particular case. Has this degree of proficiency been attained by any of our fellow bee-keepers, at this stage of progress in our onward march towards perfection? We believe it has, and with it the dawning of a day rendered bright with the light of shining countenances, and full of promise and comfort to millions of toiling men who will teach their children to bless and honor the names of those instrumental in hastening the good time coming. We believe that, by the unremitting toil and study of years, a theory has at last been discovered and applied, that will satisfactorily account for the large returns claimed. The practice of bee culture, in accordance with the principles involved in this theory, if persevered in, cannot but be productive of results in the highest degree satisfactory. It is a fact well known to bee-keepers, that at times, and under certain conditions, colonies of bees, in the accumulation of stores and the general economy of the hive, will so far exceed the general average of colonies equally strong, as to fill the apiarian with astonishment, and almost persuade him that they are a superior kind of bee. In my own practice I have oftentimes had colonies to work, with untiring diligence, weeks after the labors of others had ceased. So, too, every bee-keeper is cognizant of the superior thrift and industry in which a newly made swarm, whether natural or artificial will excel others by its side, having perhaps twice its amount of bees. I once had a swarm to issue on the last day of June, from a common box hive, after having doggedly refused to do so for nearly a month, the bees all this time lounging inside and out on the sides of the "gum," without any apparent increase in the contents of the hive, except in brood and bees. This swarm, with above the average in number of bees, was put into a hive of the capacity of about 2200 cubic inches, inside measure, having glass in the rear, its full length, with a blind to intercept the light and darken the chamber. In two weeks from the time this swarm was hived, such was the extraordinary rapidity with which it worked, its hive was filled to overflowing with combs and honey, and two boxes, of the capacity of about thirty pounds, placed on the top, were filled likewise. The boxes when filled were taken off, and an estimate of the honey stored in both hive and boxes, which could be done with some degree of certainty as their weight when empty had been ascertained and marked on their sides. After making the necessary deductions for bees, brood, &c., I estimated the amount of honey gathered at eighty (80) pounds; apportioning fifty pounds to the brood chamber, which I deemed moderate, as the honey was capped in the combs within two inches of their lower edge. Here is the clever amount of eighty pounds of honey secured by a colony of bees in two weeks, while under the honey gathering impulse excited by swarming,—which impulse, or propensity for gathering honey can be generated in a colony of bees at any time that there is bloom, and maintained throughout the season.

This extraordinary industry in newly made swarms (but by no means peculiar to them) has often been remarked by bee-keepers, and given rise to much speculation as to the true cause of its development. Among many causes assigned in explanation of this seeming mystery, perhaps the most plausible is the theory which supposes the queen's age and fertility to govern the industry of the hive. But, admitting the full force of this assumption, with full conviction of the advantages secured to the apiarian by the continued presence of a young and prolific queen in each and every colony, there are times and instances, in which even this fails to furnish the explanation required; as, for instance, the case already cited, in which prior to the issuing of the swarm, a few bees only left for forage, while the much larger portion lounged on the sides of the hive for days, feeding on the stores already garnered. If the queen's extra fertility be urged as a proper solution of the extraordinary rapidity with which this swarm filled all its tenements to overflowing, we must imagine her to have suddenly acquired some new capacity for laying, else the difference in the bees, in point of industry, before and after the swarming, cannot be satisfactorily accounted for.

The point to be gained by the bee-keeper of the present time is to ascertain, if possible, the true cause of the honey gathering impulse in bees; the conditions necessary to its continuance throughout the season; and the most efficient means of generating and stimulating it to its fullest capacity, in order to secure the largest returns. If the product of a swarm of bees incited to labor by causes in accord with their natural habits and instincts, will reach the attractive exhibit of eighty pounds in two weeks, to what amount will this increase if the honey gathering propensity is, by judicious treatment, fostered to its fullest capacity, and retained in this condition throughout a long and inviting honey yield? If, through the inventive genius of man, we are enabled by means successfully introduced, to rouse the slumbering activity of our bees, and thereby secure a continuous product of eighty pounds, or more, every two weeks, it will not require a very great amount of figuring to show how he can increase the average yield of every good colony to 500 pounds of honey.

In conclusion, I would suggest for the benefit of those bee-keepers who have hitherto fancied themselves the big lights in the business, and those whom Mr. Quinby refers to in one of his communications to the BEE JOURNAL, "as quite likely to imagine they had reached perfection, and with them would be the end of all progress," to withdraw from the field as instructors for a while, and quietly consent to be beat; for gentlemen, you are beat—myself included—and badly beaten too! Even the far-famed Mr. Gallup, who, in my opinion, has reached a point in successful bee culture far in advance of many of his contemporaries, is also beaten; for all who had the good fortune to read Mr. Gallup's articles in the Bee Journal, will recollect that he never claimed the ability to increase a good colony to over twelve or thirteen in one season! Therefore, gentlemen, let us quietly submit to be beaten, and not like some others get mad about it, and make ourselves extremely ridiculous by recording ourselves as antagonistic to "the progressive spirit of the age!"

JOHN L. MCLEAN.

Richmond, Jeff. Co., Ohio.

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[For the American Bee Journal.]

Bee-cellars should be Ventilated.

I see, on looking over the Journal, that a large proportion of bee-keepers are undecided about the cellar as a repository for wintering bees. One has tried the cellar, and found it a good place; another has tried it, and found it a bad place, etc.

In the first place, a cellar, if slightly damp, should have abundant ventilation; for I take it for granted that bees must have fresh air in order to be healthy, as well as human beings or every animal that breathes. In fact, every repository where a number of stocks are to be kept, whether under ground or above, should have ample provision for ventilation. And, in cold weather, fresh air should be rarified or warmed somewhat, by passing through an outer chamber; or, where nothing better is practicable, by having it pass in through a trench or pipe under ground. In warm or mild weather, doors or windows can be opened at night and closed in the morning. Also, ventilate each swarm according to the number of bees it contains, and give upward ventilation. Different forms of hives require or will admit of different modes of ventilation. Do not be alarmed about the water-dearth, for if your room or cellar is ventilated right, they ought not to commence breeding until about the time to set them out in the spring. If the cellar or repository is too warm, they will commence breeding earlier, and will then want water; but I consider it poor policy to start them to breeding until just before setting them out. I know by actual experience that a pint of bees can be wintered in my hive, in my cellar; and an extra large swarm can be wintered in the same kind of hive, in the same cellar; and both winter equally well. Now, if a pint of bees can be wintered in my hive, with the proper ventilation, the reader will readily see that any number of reserve queens can also be wintered with safety. I have wintered reserve queens, and then, if I did not want them in the spring for queenless colonies, built them up into full and profitable stocks the ensuing summer.

Novice's plan of ventilating his new bee-house is a good one; that is, having the air come into the vacant space under the floor, before admitting it into the room where the bees are. He may not have provided sufficient ventilation in a mild winter, but that he can remedy by opening doors at night. He will be apt to find that a large number of swarms stored in it will require abundance of ventilation, especially in mild weather. With thirty-eight swarms in my cellar, I only closed the ventilator two nights, up to January 18th. In one of those nights the thermometer was down to 15°, and in the other to 10°, below zero; and by twelve o'clock the following day the cellar would get quite warm, so that some of the swarms would manifest uneasiness; but on opening the ventilator, they would soon be all right, though the thermometer was still at zero. Potatoes are keeping well in a bin under the bees, but turnips and onions in the centre of the cellar are sprouting considerably.

My first attempts at wintering bees in a cellar were entire failures. I lost ten good swarms, all for the want of requisite knowledge.

E. Gallup.

Osage, Iowa.

[For the American Bee Journal.]

Can we Compel or Persuade Bees to build Straight Worker Comb throughout the Hive?

Mr. Editor:—When Mr. Langstroth invented the movable comb frames, he laid the foundation for improved bee-keeping. But the frames, of course, were useless unless straight combs could be secured in them. I believe he first used the flat bar, but soon invented the triangular guide which has caused so much contention.

This guide is not reliable. Still, the tendency is to secure a straight beginning in the top of the frame. But, when started right, they are liable to be warped and twisted, so as to make crooked work as they are carried down. To compel the bees to carry them down straight, and all of the same thickness, the Calvin comb guides were invented.

I used these guides three seasons, and will give my experience with them. The first season I used them in one hive, and had the most perfect work I ever saw. The combs were almost as straight and even as a joiner could plane a board. The second season they were put into three or four hives. The result was a failure. I supposed it to be owing to the season being poor, as the bees were frequently interrupted by bad weather.

The third season I put them into four or five hives, and although the season was a good one, and the hives were filled with comb and honey enough to winter well, the swarms were ruined. Full half the combs were built crosswise, and of course in small pieces; and such as were built lengthwise were so crooked, and attached to the guides to such extent that these could not be taken out without cutting the combs and ruining the swarms. I was busy at the time the guides should have been taken out, or the trouble might have been prevented in part. The guides are now laid away among the things that were.

The next course adopted by me to get straight combs, and the most reliable of anything I have tried as yet, is to use worker-comb fastened to the under side of the flat top bar with beeswax and rosin. If it is the right kind of comb, and properly put in, it is perfectly reliable in starting straight worker-comb. But how long the bees will continue to build it down straight and not change to drone comb, is uncertain. They need some looking after to keep it straight. This we can do, but can we prevent them from building drone comb?

New comb is not as good as old, as it is more brittle, and liable to be injured in putting in. But comb with bee bread in it should be discarded. The bees will gnaw it out, and in doing so will frequently spoil the comb. In using old black comb, I prefer, after it is put in, to shave it down to an angle, commencing at the center and slanting to the edge of the bar. This takes off the old thick end of the cells, and leaves the comb all newly cut. So far as my experience goes, the bees are better satisfied with it, and are less liable to injure it by gnawing it down. Besides, in clustering to commence building, they are not so liable to pull it off, if not well fastened on.

I understand there is a machine invented to stamp guides for worker-comb. Thin strips of wood with one edge dipped in melted beeswax, and the base or bottom of worker-cells stamped on it. It is claimed that this secures worker-comb throughout the hive. I have no doubt the bees may follow the guides awhile, but I think they will change to drone comb whenever they are so inclined.

Mr. Langstroth at first placed his frames one and a half inches apart, from centre to centre; but afterwards put them nearer. I suppose the object in placing them nearer was to induce the bees to build worker-comb. It does not seem to have the desired effect.

Calvin Rogers.

Newburyport, Mass., May 9, 1870.

Though naturalists, for convenience of arrangement do not give pre-eminence among insects to the order Hymenoplera, yet are they the most volatile flyers, the most agile runners, the most skilful burrowers, and the most consummate architects.—*Shuckard.*

[For the American Bee Journal.]

Artificial Swarming.

The season of swarming will soon be here, and it is exceedingly important to know how to multiply stocks with the probabilities of the greatest success.

Mr. Wurster, of Kleinsburg, Canada, proposes to multiply colonies by filling an empty hive with combs and setting it on the stand of a strong stock, while the bees are out gathering honey, so that when they return they will be compelled to accept this new hive as their home; after a short time a virgin queen is to be given them, when the process will be complete.

This plan lacks two elements of success.

1. The new swarm would consist of old worker bees, whose instinct for rearing young bees would be mainly at an end.
2. The bees could only be made to adhere to the new hive after a long and exhausting effort to find their home, wherein hundreds would perish; and others would seek to join other colonies; and still others would continue their search till they found their old home. By this time their numbers would be so reduced, that they would be almost worthless.

Our profits come chiefly from early and large swarms. To secure such should be the grand aim. If you have ten populous colonies, crowded with bees, ten new colonies can be best formed, according to my experience, in the manner following:

Eight days before you propose to make swarms, select the very largest colony and purest stock of Italians, and drive out a swarm by drumming, if in a box hive, or shake them from the frames, if in movable combs, being sure to get the queen with them, and let them enter a new hive, placing it where the old stock stood. Give them one frame containing combs with honey, eggs, and young bees, to prevent desertion. This will of course be your first swarm.

Place your colony from which the swarm was driven, a few feet at one side from where it formerly stood, so that it may catch up a few of the returning bees. At the eighth or ninth day examine this colony and count all the finished queen cells; and proceed to form as many swarms as you have queen cells, (except one which is to be left in the first old stock,) driving all the time from your most populous colonies, proceeding just as with the first. The next day give each of the old colonies a mature queen cell, placing it in a cavity cut in the midst of the brood.

If there are not cells enough at the end of eight days, those needed can be taken from the stock which was left without a queen for this purpose. Thus proceeding until all your bees are swarmed, they will do as well as though they had swarmed naturally, with the advantage that your swarms have been made just at the right time.

Now put on your honey boxes, and if your swarms have been made about the time the white clover begins to yield honey plentifully, you will secure the greatest results in the yield of honey. If you have good clean worker comb, use that for your new swarms; it is just so much saved to the bees.

Of course you now use the movable comb hive and the Italian bees, or will soon make provision to do so, if you expect the largest profit. After an experience of eight years, in my Mount Pleasant Apiary, I have found them superior in every respect. Friends are invited to call and look at our stock. Mr. J. L. Strong, my partner, will take delight in showing them our manner of managing the honey bee.

E. L. Briggs.

Mount Pleasant Apiary, Henry Co., Iowa.

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[For the American Bee Journal.]

Stopping Fugitive Swarms.

Mr. Editor:—Inasmuch as you are almost daily in receipt of letters from the Northern and the Western States, perhaps you will not object to a line occasionally from the "Old North State," written by one who heretofore unknown in the columns of the Bee Journal, as Langstroth, Gallup, Grimm, Thomas, Green, or Novice, but who will answer through the American Bee Journal whenever called *Ignoramus.*

As this is my first article for a Bee Journal, I shall be brief as possible until I see that Ignoramus has a place in line with your other correspondents. But for a start, I will state that a neighbor of mine was in an open field last spring, when his attention was attracted to a vagrant swarm of honey bees rushing past, on the wing. He followed through field and forest until nearly exhausted, when he found that the bees made no signs of wanting to cluster, and that they were two hundred and more yards from woods, or nearest shrubs. Having gone through many of the Dutch manœuverings in trying to stop them, he was so tired that to follow them further was out of the question. So he drew from his pocket a small "looking glass" with which he thought he would "blind the bees" in the sunshine, and make them stop anyhow. Immediately after using his glass, the bees turned, went directly back to the woods, and clustered on the nearest bush.

Will the editor, Mr. Gallup, or some one else, please inform me what the turning of the looking glass had to do in stopping a swarm of bees when running away?

Ignoramus.

Sawyersville, N. C.

☞ We have frequently heard of arresting fugitive swarms by means of the looking-glass, but never saw it done. Mr. Langstroth, on page 114, "Hive and Honey Bee," third edition, says—"The most original of all devices, for stopping them [a decamping swarm] is, to flash the sun's rays among them by a looking-glass. I have never had occasion to try it, but an anonymous writer says he never knew it to fail."

* * *

If wet weather occurs to prevent your bees from flying out while blossoms abound, feed them moderately every day, to keep them in heart and stimulate brooding.

[For the American Bee Journal.]

Observations, Statistics, and Queries, relative to wintering bees in cellars and special repositories.

Much Esteemed Editor:—The subscriber has been a beekeeper about fifteen years, during which time he has been constantly experimenting with a great variety of hives, both patented and original, all *home* made and *well* made; and has also been experimenting in every "*modus operandi*" incident to beekeeping, particularly relative to wintering bees in all varieties of ways. In some of these he has *succeeded*, in others *failed;* FAILED and SUCCEEDED in every plan yet tried, and is yet a *novice*, at LEAST No. 2, and would be No. 1, did not another occupy that chair, and rather assumingly, too, we think!!

Well, we are still in doubt relative to the exact best method of preparing the hives containing colonies for wintering in special repositories. We do not keep many bees; never having attempted to winter more than ninety colonies in a single season. We have a very excellent, neat, dry cellar—so dry that apples would shrivel in it. It is about twenty feet long, by twelve feet broad, and nine feet high, with a nice, smooth, flagged bottom of flat stones, two and a half inches thick, laid on dry sand. The walls are massive, say three feet thick, (it being in one corner of a large stone edifice, eighty by fifty feet and four stories high). A brick wall divides the cellar from another in the opposite corner, and a wooden partition from a cross hall, on the opposite side of which is a large dairy, where butter is made, all winter, and which is of course kept at a fit temperature for raising cream, summer and winter.

In this cellar we have wintered, successfully and unsuccessfully, from thirty to sixty-one colonies of bees. These were in movable comb and box hives; some in Langstroth's, some in Kidder's, and some in other styles of movable comb, and yet others in box hives.

The temperature of this cellar is very uniform, ordinarily not varying more than from four to six degrees all winter, even when containing sixty colonies of bees—the variation being 34° to 40°. The cellar is ventilated from the outside, by six pieces of one inch lead pipe thrust through the window frames, of which there are two—one on the east side and one on the south. Through the inner partition there is a round aperture, six inches in diameter, at the bottom, leading into an outer cellar and open hallway connecting with the dairy.

In the winter of 1868-9, we wintered in this place sixty-one stocks. Twenty-four of these were in box hives, set upon shelves, having the holes through the top of the hive, connecting with the honey boxes open, inverted, with a straw mat over the bees. We found some of the strongest became uneasy, and removed the mats to quiet them. But these did not winter well; they crawled out badly, and many bees died and fell down among the combs. We did not like this plan, and would prefer setting them right end up, on a nadir frame four inches high, ventilated through its sides. Yet we have wintered box hives in this same cellar, inverted and fixed as first stated, which wintered well; but there were then only twenty-four colonies in it, set only four inches above the stone bottom.

The remaining thirty-six colonies were in movable frame hives, set on four inch slatwork, placed on the cellar bottom; the passages in hives at bottom open; honey boards removed; wire sieve preserver on top, with a straw mat one inch thick over this. These wintered well.

The past winter, 1869–70, we put into this cellar thirty-six stocks in movable comb hives. Many of them were weak in numbers and scant in honey, though we fed two barrels of white coffee A sugar to about fifty colonies, between the 7th and the 20th of September last. It was mostly scaled over. This sugar was simply melted with about twenty pounds of water to twenty-five pounds of sugar, and one teaspoonful of cream of tartar to twenty pounds of sugar. The result is that we lost thirteen of these thirty-six colonies, *seven* for want of food and *six* from some other cause—perhaps because there were no young bees bred late in the fall. Or, was it because of their feed? All the bees, both those that were fed and those not fed, were affected with a kind of dysentery, though they did not soil the combs at all, but only the tops of the frames. Three-fourths of the bees in each colony died, however, from some cause—apparently dysentery.

Query. What produced this dysentery? The mercury did not vary over four degrees, in this cellar, all last winter. Was it the cream of tartar put into the sugar? If so, why did those colonies which were not fed at all become in like manner affected, as was the case?

We had fifty-four colonies in a new bee-house, built expressly last summer, for wintering bees. It had double sills on all sides, and four sets of studding. It has three walls on each side; two of straw, eight inches thick, and *one* of eight inches of sawdust between them, two floors, and one foot of straw and eight inches of sawdust between them; a floor overhead, and on this it is designed to place one foot of sawdust and one foot of straw. This was not finished last fall. The room is twelve by twenty-six feet inside, and nine feet high. It is divided through the middle, lengthwise, to a hall five feet wide, which is partitioned off of the south end by a stud and board partition, with one inch matched boards, and the space between the studs is filled with sawdust. Thus we have two bee-rooms for storage, each six feet wide by twenty-one feet long and nine feet high. From each of these rooms we have a ventilating chimney, four by six inches, reaching from one foot below the floor overhead two and a half feet above the roof for egress of foul or heated air; and one ingress ventilating chimney, four inches by twelve, reaching from the lower floor of beeroom out above the roof. This is so constructed as to supply each of the beerooms, as one-half of it opens into each. In warmest weather these ventilators were left open; in the coldest they were nearly shut; but owing to so thin a covering on the floor over the rooms, the mercury varied too much—about eighteen degrees; that is, it fell to 22°, and rose to 40°, though it would require several days to make the change.

Well, into this house, as we have stated, we put fifty-four colonies of bees. Only *very*, *very* few of them were strong in numbers when put in, owing in part to so bad a honey season that they did not breed in the fall; and also to a heavy flood, which drowned out my apiary. The hives having to be hastily carried out (I being absent some three hundred miles from home at the time), they were so mixed up that, on my return, I could not replace them all in their proper positions, and many bees were lost when the weather was such that they could fly again.

We removed the honey boards, put over them wire-cloth preservers, and a straw mat on some; on others a rag carpet, one thickness, covering the tops of the frames entirely. The entrances at bottom of hives were closed.

Well, all of these bees, like those in the cellar, had the dysentery. Not a particle of mould appeared on the combs. Nearly all the colonies were fed in the fall; but all were alike as to dysentery. None of them soiled the combs, but the tops of the frames were stained. Question—What gave these bees the disease? Was it bad honey? Well, some of the honey is bitter; but this is principally the box honey. Was it too much ventilation? Well, the strongest stocks were most diseased. Again—about the first of February, a neighbor put into this house some fifteen very strong stocks, leaving the honey boxes on. Of course these had not near as much ventilation as ours had; but they were much more diseased. Was it too little ventilation? Who will tell us through the Bee Journal?

A neighbor once had a large apiary in a yard surrounded by buildings and a fence twelve feet high. The hives were setting on their summer stands when a whirling wind swooped intot his yard as if on fantastic toe, and upset a large number of them. There they lay, on their sides, in the snow, with the bottoms open to the cold and storms for many days, as their owner did not discover it for some time. Yet no harm came of it, they all wintered finely.

Was that dysentery caused by the food given to the bees early in September? which consisted of good coffee A white sugar, as before mentioned? If so, why were those colonies that were not fed as badly affected as the others—the heaviest even being the worst?

Will some of your numerous correspondents, dear Editor, give us the philosophy of this condition of the bees? That of those in the beehouse, where the mercury varied 18°, being precisely the same as that of those in the dry cellar, where it varied only 6°. No moisture appeared to have accumulated in any of the ninety colonies, except one, and that was a very strong one, and immensely heavy in honey. The amount of bees that perished in each colony would perhaps average two quarts—some more, some less. There was very little bad smell about the hives, and the combs were clean.

It would bring instruction to the numerous readers of the Journal, at least to such of us as are novices, to have more definite statements of the manner the hives are prepared when stowed away in special repositories. We lack sufficient statistics. Will our successful friends, who are successful every time, tell us the *size* and *condition* of their cellars or depositories, and the *variations of temperature* therein? Will they tell us whether the outside walls are laid in mortar, or without? Have the cellars flagged or cement bottoms, or earth? How much, that is how many square inches of ventilation, and how *direct* to the repository? What number of colonies deposited? &c., &c.

Our bees have no foulbrood. We hope to retrieve our losses; and as we intend to finish our beehouse with upper floor coverings, and bank it in so that the air cannot pass under it another winter; shut up the ventilators of the house somewhat more (unless some one tells us a better way); and try again. And we intend to try on, until we can succeed every time.

Will not our friends and instructors, Quinby, Cary, Grimm, Gallup, Novice No. 1, and others, give us their advice, through the columns of the Bee Journal, and post us up in these statistics.

In all our enterprizes, agricultural, horticultural, apicultural, &c., &c., we need more definite statistical information, to enable us to come out right in the Spring.

Yours, *Hopefully*,
Novice No. 2.

Mount Lebanon, *N. Y.*, April 18, 1870.

[For the American Bee Journal.]

Bees in the Southern States.

I would answer query No. 2, in the American Bee Journal for February, that from all the facts which I have gathered concerning bees in the South, this climate is eminently adapted to their nature; and that their instinct here, to store honey, is as great as at the North. During the latter part of the summer, in this locality, they generally cannot procure more supplies than suffice to satisfy their immediate wants; but when an abundant harvest does present itself, they avail themselves of it with preserving assiduity. I have seen hives where the bees had built comb on the outside, under the projection of the top, not having further room within. And instances are numerous of bees inhabiting hollow trees, building combs several feet in length, below branches in front of their entrance—thus indicating that they do not slack their industry so long as they can obtain honey.

A large apiary, properly conducted, in this portion of the country, could not fail to be profitable. I only regret that I am not so situated as to be able to devote myself to it more fully than I can do at present.

J. R. B.

Natchez, *Miss.*, Feb., 1870.

Nearly all the bees which return from the fields while a swarm is being forced out from the parent hive, will enter the hive if it is put upon its old stand, and adhere to it afterwards wherever it may be placed.—*Langstroth.*

[For the American Bee Journal.]

Replies to Inquiries, Notices, &c.

In answer to a few inquiries by Joel Dayton, I will say—keep the top of the hive as tight as it can be made, as soon as the hive is set out. A strong swarm will wax up every little crevice themselves, but a weak one must be assisted. Contract the size of the hive by the use of the division board, to assist all weak swarms in keeping up internal heat. Also, stimulate regularly with diluted sweet; and as soon as the weather becomes steady warm, strengthen weak stocks by giving them sealed brood from strong ones. The extra combs should be taken from the hives and kept in a cool place, and returned one at a time, as the bees require them. If the swarm is weak in consequence of the queen being unprolific, it should be supplied with a prolific queen, as it is useless to keep strengthening up a swarm that has a worthless queen.

I move the hive forward on the bottom board sufficient to have it project over the front edge the whole width, or raise the front of the hive on small blocks, which answers the same purpose. A strong swarm, when storing honey rapidly in boxes, will want an inch of space the whole width of the front, in warm weather, especially in your locality. On high, airy prairie they will require less. I will here state that Decorah is in a small valley, almost completely surrounded by high ground.

And now, Mr. Editor, allow me to say that the Michigan Beekeeper's Convention has rather misrepresented Gallup's paper on bee maladies. Wonder if they had been spilling bad whiskey until they could not read straight. There, gentlemen, I am perhaps harder on you, than you are on me; but remember that you are the first aggressors.

Mr. Quinby thinks there must be a mistake about queens hatching in less than ten days. As he does not believe me I will refer him to Mr. D. W. Fletcher, of Langsingville, N. Y., Mr. G. A. Wright, postmaster, Orchard, Iowa; and last but not least the editor of the AMERICAN BEE JOURNAL.* Either of those gentlemen can and probably will give information on this subject. The cases where queens have hatched on the morning of the ninth day with me, are so numerous that the tenth day cannot be accepted as the rule; and from one case I am perfectly satisfied that they may, and sometimes do, come out on the *seventh* day. E. GALLUP.

Orchard, Iowa.

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* If the weather permit, we now always transfer queen cells on the *eighth* day; having so very frequently found them destroyed, if we deferred securing them till the ninth, that we do not trust waiting even till the morning of that day. Much depends doubtless on the strength of the colony, and the temperature maintained in the hives. ED.

◆

Keep the moths from your empty combs by exposing them occasionally, in a close box, to the fumes of burning brimstone.

[For the American Bee Journal.]

Two Yellow Bands, or Three?

On page 200 of the April BEE JOURNAL, Mr. Quinby, speaking of the yellow bands or purity of Italian bees, conveys the idea that the light-colored bees bred by Dzierzon and some careful breeders in this country, are not as pure as the two-striped darker colored ones, such as he procures from Mr. Gravenhorst. Mr. Quinby admits that it may be possible that the very light ones are pure, but thinks we should not claim that they are purer than the two-striped ones.

Now my experience is that to breed queens from one that produces two-striped workers, they will almost invariably produce some black bees. I have always bred with the understanding that queens producing workers with less than three stripes, are not pure. Now, who knows whether I am right, or friend Quinby? Let us settle this point, for if friend Quinby can sell queens that produce workers with only two stripes, let us all do the same, and call them pure. I will admit that it is easier to rear two-striped queens, than those having three or four stripes. But, I am not willing to admit that they are as pure; and I do not like the idea, after some of us have, by careful breeding, succeeded in producing beautiful little colored bees, to have others claim that these are not any purer than those having only two stripes—which, till a recent date, we have been taught were not pure.

AARON BENEDICT.

Bennington, Ohio.

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Double Flowers.

It would be a sad business for the busy bee, if the florist's skill could so improve the asters and golden rods of our fields, as to transmute *all* of them to *double flowers.* Even could they thereby render them as delightfully fragrant as they would be splendid in appearance, the show and fragrance, though gratifying to the eyes and olfactories of amateurs, would by no means make amends to the bee for the loss of honey-secreting power which the metamorphosis of petals would involve. Luckily for the lovers of honey, however, science and skill combined, though able to improve a few varieties to such extent, can never reach and change the whole floral kingdom.

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The Bee-hunter's Secret.

"Sometimes he took up bee hunting for a spell, and made money by collecting wild honey. He described his manner of finding the hive or nest and securing the honey; and, with a hushed voice, he told me a secret, which was—that, if you took three leaves, each of a *different* tree, in your hand, there was never a bee would dare to sting you!"—THE SOUTHERNER AT HOME, No. IX.

◆

Among the ancients honey from Sicily was held in highest estimation, so that Hyblean honey was proverbially famous, though by some the Attic honey was preferred to all other.

[For the American Bee Journal.]

The Queen Nursery.

I recently received from Dr. Jewel Davis, of Charleston, Illinois, a circular respecting his patented Queen Nursery. In theory the matter seems very plausible, but how about its practical applicability? Two years ago, as I remember, Mr. Adam Grimm, of this place, used an arrangement substantially similar, and in so far anticipated the Doctor. But he soon discontinued the use of it, as not fully answering the purpose; and as I know Mr. Grimm to be a thorough apiarian, I can scarcely think that others will be more successful with the new device. Moreover, according to the description given, though we may secure an increased number of colonies, we shall not obtain supernumerary queens for market, unless we rear them specially, and this with more or less damage to the colony, by depriving it of its fertile queen.

I found that Mr. Grimm subsequently employed a process practically much more serviceable—permitting the young queens to mature and leave their cells in the parent hive, and removing them only when fertilized. I have known as many as from ten to twenty queens to be taken from a colony by this process, and used satisfactorily in forming nucleii.

Instead of the plan employed by Dr. Davis, I should prefer to insert in the deprived colony, or artificial swarm, a nearly mature queen cell, which will readily be accepted; and let the bees themselves "nurse" their queen.

The passion for patenting appears to be becoming epidemic among bee-keepers, so that one can scarcely venture to make and use an alteration or improvement in anything relating to hives or bee-culture, without previous careful inquiry whether somebody has not already covered it with a patent, subjecting the user to the risks or costs of litigation. Besides, the numerous patented hives now claiming notice serve rather as a discouragement to bee-culture, perplexing new beginners, leading them into useless expenditures, not unfrequently ending in disappointment, if not loss. I have myself seen not a few of such patented novelties into which I would not put a swarm of bees, if given to me gratis. It is sad to see such a waste of good lumber, fit now only for kindling wood.

W. Wolff.

Jefferson, Wis.

[For the American Bee Journal.]

From the Cumberland Plateau, Tenn.

Mr. Editor:—I thank Mr. J. M. Worden for his description, in the March number, of the hive he uses. I have for many months desired to see or obtain a description of a hive in which the frames stand on the bottom board and the honey boxes are placed on the sides of the frames, in contact therewith. I do not wish any boxes on top of frames, for my own use. Mr. Quinby was requested to describe his hive in the Journal, and thereupon Mr. Worden responded.

I came here from Ohio last fall, having sold all my bees, and am now commencing anew. On my way hither, I called on Dr. T. B. Hamlin, of Edgefield Junction, near Nashville, and purchased two queens to commence with on this mountain; and I suppose I am the only breeder of Italian bees on the Cumberland Plateau. I found Dr. Hamlin's apiary well cared for—his bees and queens handsome. He controls fertilization by the newly invented methods, and I consider him a very careful and reliable breeder.

I purchased a good many queens of different breeders last summer, and, so far as I know, did not get humbugged by any. I sold the queens I bought to others, and did not see the progeny of all of them. I found A. Grimm, W. W. Cary, and A. Gray, reliable. I intended to buy of Mr. Alley, but my order was sent so late that he could not fill it last fall.

The alders were in bloom here on the 15th of February, and the bees carrying in pollen. But cold weather soon followed, and I saw no more blossoms till March 18th, since which time vegetation has advanced rapidly. Apple blossoms are now about gone, (May 5th,) and crab apple and other wild flowers in abundance. I saw my young Italians flying on the second of February.

W. C. Condit.

Howard Springs, Cumberland Co., Tenn.

[For the American Bee Journal.]

Introducing Queens.

If friend Wilken will try fumigating with tobacco smoke, I am inclined to think he will lessen his losses very materially. The process is as follows: Open the hive; remove the old queen; place the new one in her cage on top of the frames; throw an old carpet over the frames, covering up the caged queen and the bees; put on the cap of the hive; blow tobacco smoke into the entrance for three or four minutes. Now stop a little while, and then resume blowing in smoke, continuing it for five or ten minutes, or until the bees commence to fall down and crawl out of the hive; now give them air, raise the cap and carpet, liberate the queen and let her run or drop down among the bees, and in twelve hours she will be depositing eggs.

It does no harm if the bees get so much smoke that they all tumble down to the bottom of the hive, and the queen too. The bees seem so glad to think they are alive that they will readily accept of any queen, when thus treated, even a young unfertile one. I have seen them fondling over the newly introduced queen, when they were still so drunk that they could not crawl. I think it a sure plan, and then it is all done in twenty minutes. I have exchanged queens quite late in the fall, in this way. The bees do not seem to know that the queen is a stranger.

This is friend Alley's plan. Speaking of Mr. Alley reminds me that I received two queens from him last fall, the worker progeny of which are the most beautiful of any I ever saw. I have bought queens of different persons, at from $20 down to $2.50, and would not exchange those two for any I ever had.

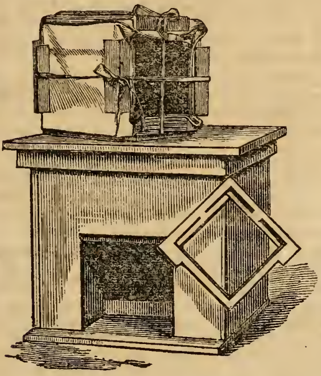
A friend, who is a *bee*-ist, called and pronounced them the handsomest he ever saw. He says he saw none at the State Fairs, last fall, that were as well marked; and then they are as gentle as flies, and almost as harmless. I never had bees that were so quiet on the combs while being handled, as they are. The queens are large and handsome, and so far very prolific.

H. C. BARNARD.

Charleston, Ill.

[For the American Bee Journal.]

Price's Revolvable, Reversible, Movable-comb, Double-cased, Sectional Bee-Hive.



THE CASKET.

This invention is destined to mark a *new era* for successful wintering and profitable bee-keeping.

1. It is the best hive for wintering and stimulating bees, and for early breeding. It has the best sectional surplus honey boxes and the best storage facilities.

2. It can be used either in horizontal or angling position, and is the best hive for wintering either on the summer stand or in bee-house, cellar or other repository.

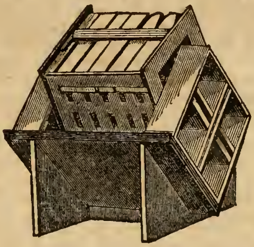
3. It is the best and safest ventilated hive ever made. A swarm cannot be suffocated in it under any circumstances.

4. It has all the advantages of frame hives without their disadvantages. The size of the brood-chamber can be made small or large at will, to suit the requirements of the colony.

5. It is on an entirely new principle, and is warmer in winter and cooler in summer, and of a more equable temperature night and day than any other hive. The bees cannot gum or propolis them so that the sections and comb cannot be handled separately.

6. The surplus honey sections are in close connection with the brood-chamber, and with one another, and the bees are certain to work in them when there is honey to store. The sections can be used to the full capacity of the hive, or of the bees to fill them, and the bees can be forced to work in any number at once, thereby greatly increasing the yield in short honey seasons.

7. It is the only hive that can be used angling and always secure straight combs, and can be made by any one who can use square, saw and hammer, and drive a nail.



8. Its facilities for breeding and for stimulating the queen to the production of brood ensure large, vigorous swarms at the honey harvest.

9. It is the only hive that saves bees from destruction, from falling on the snow on warm days of spring.

10. It is the best self-cleaning hive, and affords the best facilities for the removal of dirt.

11. The surplus honey can be had in boxes or sections, and can be taken from the top or side of the hive.

12. It is easier handled and moved than any other large exterior case in use, as the casket is removable from the case.

In brief, its combination will suit all tastes, as it has all the advantages without the imperfections of other hives.

JOHN M. PRICE.

Buffalo Grove, Iowa, May, 1870.

[For the American Bee Journal.]

Novice.

DEAR BEE JOURNAL:—We are sorry to inform you that our plans for 1870, as regards bees, are considerably marred by the disastrous fire which visited our town on the 14th of April. With the ruin of our store and business, our Quinby hive and a number of American hives, lumber, &c., which were stored in an upper room, were burned. And now, more than that, our bee-house, for want of a better place, is now used temporarily, as a receptacle for the tools, &c., saved from our manufactory. Well, to make the best of it, we are nearly as well off as far as facilities for the bees are concerned, as we were last year. Artificial incubation and many other matters, have to be laid "on the shelf" for the present.

We regret the loss of the Quinby hive, as we were quite anxious to test it; so much has been said on the subject, and one correspondent thinks we were rather harsh in speaking of the "non-swarming boxes piled all around" arrangement of Quinby and Jasper Hazen.

We grant a great advantage there for box-honey; but cannot admit that one or two hundred pounds can be safely calculated on, by simply setting the bees to work in one corner of a "great barn," as Adam Grimm expresses it. And Mr. Hazen's reply to him was, in our opinion, nothing more than another tremendous puff for his hive, without noticing the main question at all. If Mr. Hazen had told us why his hive gave more honey than a two-story Langstroth, with brood in the middle of the lower story and empty combs or frames at the sides and on top, he would have given some light. We do not need to tell intelligent bee-keepers that more honey will be stored in frames than in small boxes; and so far as non-swarming is concerned, in Hazen's hive they *may not swarm;* but with Langstroth's hive and the melextractor we can be almost sure *they will not.* Now how is Hazen's hive to give Mr. Grimm four or five times the honey he gets now? We wonder if Mr. Grimm feels like burning up his hives and buying a right for the Eureka! Why not? Mr. Hazen gave him the figures! Supposing a swarm of bees inside of one of those piles of honey boxes should not start to work in the combs at all (see Gallup, pages 229 and 230, current volume) we suppose Mr. Hazen would pile on *more boxes*, and they would certainly then fill them *all*, as he seems to think that nothing else is necessary. And if they manifested an inclination to swarm, we suppose *more boxes* still would cure it.

Our experiments have led us to think that the kind of hive makes but little difference, so that the bees are properly protected while raising brood in the spring. With a small colony in the spring, we think something like Gallup's or the Economic Hive would be an improvement; but with a strong colony (and those are certainly the profitable ones) we think we can show as good a result with the Langstroth hive, as with any other. Should something like Quinby's be decided to be more convenient, then there is certainly that advantage; but no bee-keeper about here, who had ever examined our Quinby hive that was burnt, would for a moment think it easier to handle than the two-story Langstroth.

Dr. Conklin has sent us one of his Diamond hives arranged for the melextractor, with sixteen frames one foot square. We thought of making an Economic hive to test that form; but this comes so near it, we think it will answer every purpose for experiment. The arrangement to support the frames, we are quite favorably impressed with; but the way the honey-boards are put on, and the shutting of the hive, we fear will not work so smoothly when covered with propolis. His advice to *grease* the frames where we do not wish them to stick fast, is a novel idea to us. We shall try it.

Our queen, mentioned last month, with the small drones, *did* become fertilized. We first noticed her laying eggs on the 26th of April, and she has filled her hive with brood quite rapidly. As it was so late before she became fertile, there *may* have been other drones flying, though we had seen none among the Italians, which are always some time in advance of common bees, and are now coming out.

We omitted to mention some time ago that we had been experimenting on some substitute for a division board—something that would be warmer for small colonies, and that could be readily tucked up around them; and also for covering the holes or slats in the honey-board. We tried cloth, and finally cotton wadding in sheets, which is very cheap and warm. But the little chaps could not keep from pulling it in pieces and poking their heads out, so that it was very soon used up. We finally had some little quilts (or whatever you choose to call them) made, and they answer admirably. The bees cluster up close to them, and even gum them down to the frame; but they can be readily removed at any time. With a sewing machine they can be quickly made of cheap cotton cloth.

Apple trees are now in blossom, and our stocks are raising a large amount of brood and making active preparations for swarming, which we shall check in due time, as we prefer to manage that matter ourselves.

We mentioned a stock of hybrids last fall, that objected to being put into winter quarters. Well, in the fore part of April, we discovered them to be entirely out of honey, although they had an abundant supply, like the rest, in the fall.

Mr. J. H. Thomas says, if Novice had expended his two hundred dollars in a cellar, he would not have had to open doors at night, &c. Does he not forget that we were compelled to use *damp sawdust* (so much so, that this spring we found lumber placed in a loft quite damp and covered with mould); and that a dry cellar, in our locality, is something that we have been trying in vain to make. If we would change our bee-house, in any respect, it would be simply to make it larger. As for holes under ground, or below the surface, our experience has given us a prejudice against them. They are damp and mouldy, and hard to get into and out of.

On page 188, J. M. Worden says, there are two faults which all loose frames have. First, want of stability—being unfit for transportation. Our experience is as follows: We at one time bought six stocks of bees, in the fall, in Langstroth hives; put them in a lumber wagon without springs; and as it soon commenced to rain hard, we drove briskly three miles. Not a comb was broken, *nor a frame loosened*, although as they were new swarms, all the combs had been built that summer. We have given the matter nearly as severe a test several times since, with the same result, because bees *around here* brace their combs against each other, and fasten the frames all that is ever needed. The second objection is new to us, and may be right. He says: "In the best form of frame hives this loafing space amounts to one-fifth or one-fourth of their whole capacity." But supposing we did not give them this "loafing space," would they be sure to go to work? We fear they would not. When they loaf outside, we can manage them. Cannot some one get out a patent to squeeze the sides of the hive together, when it is desirable to have the bees go out and go to work? The idea we give freely to those who are competent to develop it. As for ourselves, we are content still to take a back seat and look on, as should a

NOVICE.

P. S. A neighboring beekeeper has just made us a call, and speaking of Quinby's queen yards, says he tried three last year, but hybrids would swarm in spite of them. When they found the old queen could not go, they killed her, and raised young ones. The same thing has happened with us. When the ground is kept clear about the hives, and sawdust banked up to the entrance as we should have them, we cannot see much use in the queen yard. If the queen should crawl off we have always found enough bees following her, to find her easily. For the last two years we have, with the melextractor, prevented swarming *in every case when we wished*, without even taking the trouble to remove queen cells. As they were not allowed to get the swarming fever, we had no attempt at natural swarming, with one exception only, in that time.

P. S. No. 2.—Langstroth recommends, on opening a hive to set the combs in an empty hive, to keep away robbers, &c. We did this until we found it did not suit us, as many of the bees, especially the young ones, would get into the empty hive, and it was some trouble to dislodge them. In some cases, too, the queen got off the frames with a cluster of hybrids, and might in such cases get lost or be injured in shaking the bees out. Now we stand each frame on end against the stake that supports the grape vine we have before mentioned, and the young bees that fall off, get off, or are shaken off, for any purpose, have a smooth, clean, *sawdust walk* back into the hive. In using the melextractor, the bees are sometimes an hour or more in getting in; but we have never known them to fail, if grass and weeds were kept away. As for robbers, since our bees are all Italian, we have almost forgotten there are any, and scarcely take any precaution at all, now.

[For the American Bee Journal.]

Review of the May Number. Introducing Queens.

In reading over the discussion in the German Bee-keeper's Convention, I notice that Major Von Hruschka recommended a method of introducing queens, which in its general features resembles one practiced by me for over two years past, with uniform success in every instance; and which, in practice is, I think, more simple and easy than that recommended by the Major.

In answer to the request made by Mr. R. Wilken, on page 226, I will give, through the JOURNAL, the method practiced by me. Whilst pondering over the subject of introducing queens, I asked the question, "*How do bees recognize each other?*" All intelligent bee-keepers answer, "*By the sense of smell.*" Here we have the key at once. If we perfume a bee, away from its own hive, sufficiently to overpower its peculiar home scent, that bee will be treated like a robber on its return to its own hive. Again, in uniting bees, if both swarms, before uniting them, are perfumed so as to be of nearly similar scent (other conditions being right) they will never quarrel. Acting on this knowledge, I proceed as follows: I take the rose or jet of a common garden sprinkler, and fill it with a piece of sponge. I then prepare a mixture of sweetened water and *essence of anise.* I next set an empty hive beside the one which is to receive the queen, blow a little smoke into the stock of bees, open it; lift out successively each comb and the adhering bees; look for the queen, and gently sprinkle the comb and bees by dipping the sprinkler in the mixture, and hang the comb in the empty hive. As soon as I see the queen, I catch and destroy her. After all the combs are removed and sprinkled, I sprinkle the remaining bees and the inside of the hive. I then spread a sheet in front of the hive, lift out a comb, shake off the bees to the sheet, sprinkle them again, and replace the comb in the original hive. In this manner I treat all the combs and bees; take the Italian queen, sprinkle her with the same mixture, and drop her among the bees on the sheet; hive them like a natural swarm, and all is well. I did not introduce quite as many queens last season, as Mr. Wilken states in the JOURNAL, but I introduced nearly one hundred and lost not one.

PATENT HIVES.—REJOINDER.

On page 232, Mr. D. L. Adair, expresses himself in language which leads us to infer that he has the exclusive right to all frames constructed to form a chamber independent of the outer case. In making this statement he is probably not aware that the Champion Hive, is so patented as to clearly embrace that feature. Nearly all of these hives are made with their sides separated, and Mr. Adair has probably not come in sight of one of these double-sided hives. For the benefit of all interested, I give a few extracts from the specification of the patent. "The top bars K and the vertical pieces *m*, *m*, are made wide enough to have the edges of the several frames to touch each other, forming a second wall, or a closed side, independent of the case. These frames are constructed a little shorter than the interior space, of length and height of the case or body of the hive, so as to leave air-space between the case and the frames R." "Between the sides of the case and the frames, in the interior, I have a movable side board," &c. Claims granted: "The comb frames R, constructed and arranged substantially as and for the purpose described," &c. Any one wishing to see an exact copy of the patent, can obtain it from the Patent Office, No. 67,123—while Mr. Adair obtained his patent much later, No. 68,141.

STUPIFYING BEES.

I think that the use of chloroform on bees is very objectionable, since a little smoke properly applied, is sufficient to subdue the most vicious stock of bees, without injuring them in the least.

ALL ABOARD.

Friend Price must undoubtedly belong to the passengers of Train No. 2, with *mixed freight* and *sleeping* car, if he counts all bee-keepers that believe in tight tops and side-doors as among "the Rip Van Winkles who have secured berths in the sleeping car to the end of the journey of life." Nearly half, if not more, of our most intelligent bee-keepers prefer side to top opening hives. It is not long since one bee keeper stated in the JOURNAL that many times he felt that he could take an axe and knock off a side. Dzierzon and Berlepsch, two of the most scientific bee-keepers of Germany, use to-day side-opening hives. In my apiary I have hives which open from the top only, and also some which open from the side and top both, and for my use I make no other than side and top opening hives, as I prefer them for the great convenience they give for the management of bees. When friend Price speaks of fixed frames, he speaks of something I do not understand. During my travels I have seen several styles of frames, but all were movable; and a *fixed* frame I have never seen.

I however agree with him on all the other points named by him; but those above referred to are undoubtedly placed on the wrong *train*.

E. KRETCHMER.

Red Oak Junction, *Iowa*.

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[For the American Bee Journal.]

Systematic Plagiarism.

MR. EDITOR:—It is quite amusing to see the amount of "plagiarism" going on with the egotistical portion of the writers on bee-culture. I have read most of the new works now extant, and must say that nearly all of them are taken more or less from Langstroth's work, and some of them nearly entirely so. For instance, the Bee-keeper's Text Book, by King & Co., is nearly altogether copied from Langstroth's large work; and several others that I might mention are made up in the same manner. But the most complete and "double" plagiarism that I ever saw is in a little work by N. C. Mitchell, of Indianapolis, Indiana. He (Mitchell) says he acknowledges that he has not confined his work altogether to his own views, but has "drawn from the Mysteries of Bee-keeping by Quinby, Text Book by King & Co., and K. P. Kidder's work," &c. Now, if Mr. Mitchell is familiar with the rise and progress of bee-keeping in this country, he knows very well that the works he mentions have drawn more or less from Mr. Langstroth, and that without giving Mr. Langstroth credit. That is what I call "double" plagiarism. The great effort of such men seems to be to keep the name of Langstroth and his work entirely out of view. And I here venture the assertion that there is not now a single patent frame hive in existence, but partakes more or less of the Langstroth principle—the constant endeavor of the patentee being so to alter or change his hive as to seem to avoid infringing on the Langstroth patent. This is evident from the notorious fact that every patent hive of any note is undeniably modelled in some of its essential features on Mr. L.'s original invention. So, too, with the books. The effort of nearly every one of the compilers of these little "one-horse" books seems to be to keep Mr. Langstroth's comprehensive and invaluable work altogether out of sight. If they give anybody credit for their plagiarisms, they take special care it shall not be the one who deserves such credit, as in Mitchell's case. I was much amused this morning in reading an article in the Illustrated Bee Journal, from the pen of T. Clark Atkison, (May number, page 319.) The writer seems much pleased at the rapid progress of apiarian science, warns old fogies to get out of the way, and then to show the advance of the science, says there are at this time two Journals published for the benefit of bee-keepers—one, the Illustrated Bee Journal, by N. C. Mitchell, and the other, the Bee-keeper's Journal, by King & Co. There he stops, never once mentioning the AMERICAN BEE JOURNAL—the oldest and by a long way the best advocate of apiarian science. This is only another effort to keep out of view the pioneers in this cause, and puff into notice others who depend wholly for their existence on the continual bursting of little "gas bubbles," and bringing themselves into notice by blowing their own "horns." If ever there was a periodical sprung into existence by vanity, and kept alive by "gassing" and the most absurd assertions, it is the Illustrated Bee Journal. There is no end of the preposterous pretensions of the editor, and some of his correspondents partake of the same disposition. And if ever there was a catchpenny on any subject, the Bee-keeper's Journal, by H. A. King & Co., is one, beyond all doubt. At least such is the conclusion I am forced to come to, from a close perusal of the paper for a year.

I do like fairness and honesty in everything; and everybody that knows anything at all about the history of bee-culture in this country, knows that Mr. Langstroth is the great pioneer, and the inventor and first introducer in this country of the movable comb system, which has so entirely revolutionized bee-keeping; and that the AMERICAN BEE JOURNAL was the *first periodical* to advocate bee-culture as a business. And now that that business has so increased by numbers, through the exertions and influence of Mr. Langstroth and the editor of the AMERICAN BEE JOURNAL, that other papers can not only live but "make a large profit," such as the above described have sprung into existence, and in their self-conceit presume to ignore older and abler workmen. Is it so, Mr. Editor, that the two papers named are the only bee papers now published, or is the old AMERICAN BEE JOURNAL still alive? I trust it is, and will long continue to be.

B. PUCKETT.

Winchester, *Ind.*, May 9, 1870.

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It is observable that creatures nearest the earth are most greedy to accumulate. What creature stores up so much provision as the bee? But the birds of the air that fly next to Heaven neither sow nor reap, nor carry into the barn, saith our Saviour, "We are next to Heaven in profession, let us hate to be furthest off in conversation."—*Purchas.*

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If a bee-keeper relies on natural swarming, his apiary should be carefully and constantly watched during the swarming, especially when after-swarms may be expected.

[For the American Bee Journal.]

Ventilation Again.

Mr. Editor:—I am a constant reader of the "Bee Journal and find a great deal of valuable information therein contained, besides some that I think not so valuable. Although my experience in bee-keeping has been somewhat limited, still I think I have gained some knowledge of the business, which may be useful to those who have had less experience than myself. I would not assume to teach any old beekeepers, but simply to throw out a few hints of what I regard as "sound doctrine."

I propose to say a few words on the subject of the *true theory of ventilation*, on which I am aware there is a wide difference of opinion. Some believe in abundant upward ventilation in winter; some in abundant ventilation from below; others, again, in little or no ventilation at all. Now, I conceive the great desideratum for successful wintering is, to *keep the bees as dry as possible*, still retaining all we can of the animal heat. If we accept this as our text, we have got a foundation upon which to build a true theory of ventilation.

I take it to be a fact that *dampness* is the great enemy to successful wintering, causing mouldy combs, fermentation of honey and pollen, disease, and death. There are two ways to dispose of this dampness; first, by *abundant upward ventilation*, second, by *ventilation from below*, with *absorbing* materials above. Now let us look at the merits of the two. In the first case, then, abundant upward ventilation may do very well, where bees are wintered in a special repository, like Novice's, described in vol. v. p. 131, and the requisite temperature is maintained. But for unprotected out-door wintering, it allows too much animal heat to pass off with the dampness, thus causing a greater consumption of honey, and perhaps starvation. In the second case, by ventilation below and absorbing materials above, we get rid of the dampness as effectually, as in the first case, while we retain nearly all the animal heat—supplying the bees with pure air, without a draft through the hive, which is unnecessary and should not be allowed in any case whatever. Therefore the second case has the advantage over the first, in retaining the animal heat, lessening the consumption of honey, and saving the lives of the bees.

In preparing bees for out-door wintering in movable frame hives, I would remove one frame, spreading the others somewhat to allow more room for clustering. Make a hole in the bottom board, equal to three or four square inches, covered with wire cloth on the inside for ventilation, as recommended by Mr. Cox, Mr. Quinby, and others. Then remove the honey board, and place in its stead some good absorbing material and non-conductor of heat, like paper, woollen cloth, straw, &c. I have a very favorable opinion of the paper quilt recommended by Mr. C. Hastings, Bee Journal, vol. v. p, 44. I have used it this winter, to my advantage. Put the paper quilt upon the frames; make four one inch holes in opposite sides of the cap; fill the cap with good dry straw or hay, and put it upon the hive. Close the entrance to half an inch. Bees prepared in this way are in good condition for out-door wintering.

To winter in a special repository, give the ventilation in the bottom board; remove the cap, and place the paper quilt upon the frames.

I have drawn this article longer than I intended, and fearing that I may weary your patience, I will close with greetings to all my fellow beekeepers.

P. R. Russell, Jr.

Lynn, Mass., March 14, 1870.

[For the American Bee Journal.]

Great Fatality.

Mr. Editor:—I heartily agree with Mr. Hardesty that all beekeepers give their experience in wintering as soon as the job is done. Loss in wintering is the great drawback in this locality. When my bees went into winter quarters, I was the possessor of forty-eight colonies. To-day I have but six still alive. Nine were in box hives, three miles from our village, on their summer stands; six died apparently of dysentery or bee cholera. The locality for bees is what I call a good one. Fruit blossoms and white clover quite plentiful. Basswood, whitewood, soft and hard maple, sycamore, elm, and all honey-producing trees, native to this country, in great abundance. Seas of goldenrod and boneset; also considerable wild sunflower, catnip, and (to top off with) a small field of buckwheat. All this forage is within three-quarters of a mile distance. Soil clay, land heavy timber, bordering on a large swamp, twenty miles long, and from one-half mile to three miles wide. Yard well sheltered.

These colonies were partly new and partly old ones. My home apiary consisted of thirty-nine colonies; seven in Langstroth hives (four of them shallow form, and three deep ones), and thirty-two in double wall hives with paper quilt (described by Charles Hastings) over them. These double wall hives are topbar hives, $13\frac{1}{4}$ inches square and 12 inches deep. About one-fourth of the bees were Italians and hybrids. Thirteen colonies were in a large, airy, and dry cellar, with temperature ranging from 35° to 40° F.; six were buried (on the Bidwell plan, below the surface, with no ventilation); and the rest remained on their summer stands.

The first to die was an Italian colony in the cellar, with pure queen purchased of Adam Grimm. The colony was strong in numbers, was in a shallow form Langstroth hive, and left about fifteen pounds of honey. The next was a colony of black bees, in the cellar and same kind of hive, leaving some honey also, the hive not being much besmeared. Next, I discovered seven colonies dead, out of doors; all were strong with bees, and left plenty of honey. The remaining ones were then (February 3d) put into the cellar, where they died off one by one, till only six were alive when set out on the 29th of March, and three of them have gone the way of all flesh since. Nearly all the hives and combs, especially those that were left on their summer stands, were very badly besmeared. The bees were found dead in a mass, between the combs and on the bottom board. The six buried were in the same condition, except that the lower half of each comb was entirely ruined by mould.

The forage of these bees consisted of fruit blossoms and white clover, in great quantity, right at hand. No honey however on clover with us, as most other places, on account of continued rain. Basswood, whitewood, and other honey producing forest trees, one mile and a half distant. Goldenrod, boneset, and hoarhound, near by. Also, fifteen acres of buckwheat, eighty rods distant.

I can see no other cause for this mortality, except unevaporated watery stores. By the way, I notice some of these bees are voiding around the hives and on the alighting board to-day; some staggering as though crippled. Another thing new to me (as my experience is short) is a white sticky substance on the upper side of the abdomen, which in many cases pastes the wings fast, and prevents the bees from going to the fields. Has any one seen anything similar? Is it common, and does it come from a flower? It remains on them for days. Many are wandering around in the grass, trying to loosen their wings.

I would say for the benefit of Mr. Hubbard, that a farmer living one mile and a half from here, near a whortleberry marsh, had two sets of boxes (whose capacity is fifty pounds per set) on our hives, filled nearly full from whortleberry blossoms alone. This I witnessed.

I would like to have Mr. Gallup give his opinion of the mortality of bees in our locality, for nine-tenths of the bees within ten miles of here are dead. Apiaries of from fifteen to twenty stands are swept clean. I would like also to have him give us a *minute* description of his hives; how everything is arranged; what is the shape and size; where is the entrance; which way the frames run, how many, how large, &c., and the why's and wherefore's—remembering that some of us are only subscribers of 1870.

I think my next step upward will be from top bars to movable frames; but not until I have purchased a right to use them. I understand that Mr. Langstroth (the inventor, and I believe the father to all bee-hive inventors, when the truth is told) does not own the territory in which I reside.

And now, Mr. Editor, to close, I would say that I have had an invitation to join the Farmers' Club of this village, and talk to them on the subject of bee-keeping. I think I shall go and try to get up an interest. Shall I take my helpmate (the AMERICAN BEE JOURNAL), and read a few appropriate pieces therefrom to them—among them Mr. Newton's views of the Italian bee; pass round the Journal, and prove to them if possible, that it will not bite.

JAMES HEDDON.

Dowagiac, Mich., May 9, 1870.

The laws whereby the commonwealth of bees is ordered, are natural, not written in letters but engraven in their manners.—*Butler.*

[For the American Bee Journal.]

In the Dark Ages of Bee-keeping.

MR. EDITOR AND FELLOW BEE-KEEPERS:—As I am a constant reader of the Journal and a lover of the honeybee (the honey, of course, included) I think it my duty to write a few lines for its pages, while I profess that I have no axe to grind. I commenced bee-keeping in the year 1859, and have been trying to get up a large apiary. I started with one stand of bees in the old fashioned box hives; and it has been I and the moth for it, almost ever since, though I have overcome the scoundrels after a long struggle—but not until I left off using the box hive.

Before I used the movable comb hive, I had at different times as many as eighteen or twenty hives, all in excellent condition. Of course I looked for a large increase the following year, but when the year rolled round, I was doomed to disappointment, for all my bees were dead, except a few strong colonies.

My mode of getting honey to eat or for other purposes when wanted, was this: I got me a shovelful of live coals and a good roll of brimstone, stole upon my bees at night, and smoked them to death in a short time. I thought I had a lot of as good honey as any man, and that I understood as much about raising bees as most of them. You can imagine what a flavor my honey had. It makes me shudder to think of such a dish now. But we will class that as pertaining to "the dark ages."

I have my first hive of bees yet, and have never realized a copper from them, in honey or anything else, except a few swarms every year. In the year 1868 my eyes were opened, for I had then the pleasure of seeing something wonderful, as I thought—a patent hive! Of course I went in for one of those "tricks," for I thought that with it, I should have bees and honey both, without any trouble. The first swarm that came forth that spring, I placed in the new wonder;—and the bees seemed to labor so industriously, that I went to work and had more hives made; and now my apiary is increasing very fast.

My bees stood the past winter very well, and came out in the spring in excellent condition. I have got one new swarm this spring. Who can beat this?

I should like to ask friend Gallup a few questions through the Journal, as he is well posted in bee matters. When is the right time to feed, in fall or spring? And what kind of food is best? Which is the best kind of hive to use, and where can it be got? And which is the best way to winter bees, in the cellar or the open air?

Now, hurrah for the AMERICAN BEE JOURNAL. May it yet be found in the family of every bee-keeper!

T. WOODY.

Pleasant Valley, Mo.

In some locations and seasons, either from long and cold storms, or from deficiency of forage, stocks that are not well supplied with honey will exhaust their stores and perish even in May, unless they are fed.

[For the American Bee Journal.]

Cheap Paint for Hives.

Mr. Editor:—Noticing in the Bee Journal an inquiry for a cheap and useful substitute for lead and oil paint, I will give the following:

Take half a bushel of nice unslacked lime; slake it with boiling water, covering it during the process to keep in the steam. Strain the liquid through a fine sieve, and add to it a peck of clean salt previously well dissolved in warm water; half a pound of powdered Spanish whiting; and a pound of clean glue previously dissolved by first soaking it well and then hanging it over a slow fire in a small kettle, within a larger one filled with water. Add five gallons of hot water to the whole mixture; stir it well, and let it stand for a few days, covered from dirt or dust. Apply when hot, by keeping it over a fire.

Spanish brown stirred in will make it red or pink, according to quantity. Lampblack and Spanish brown makes a reddish stone color.

It is quite a chore to prepare this properly, but when it is ready you have an article that is hard to beat.

P. Young.

Sharon, Wis.

[For the American Bee Journal.]

A Cheap Paint.

Mr. Editor:—Several correspondents having called for a paint receipt, the following from the Florida Land Register, may answer their purpose.

Durable Whitewash for Outside Work.—Take one bushel of lime, mixed as usual for whitewash; then add and thoroughly mix twenty pounds Spanish whiting, seventeen pounds rock salt (Liverpool salt) twelve pounds brown sugar. Apply thin, three coats, and it will remain longer than white paint, will not wash off, and cannot be rubbed off.—Solon Robinson.

Mix in colors to suit.

John M. Price.

Buffalo Grove, Iowa.

[For the American Bee Journal.]

Cheap Paint or Whitewash.

Mr. Editor:—In the February number of the Journal, Mr. Coggshall makes inquiry for a cheap paint.

Take fifty parts of white lime, six parts of alum, twenty-five parts of curd cheese, made from sour milk, and add a small portion of blue vitriol.

The milk should not be heated very hot, or the curd will be too lumpy. Mix all together, and run it through a paint mill, and it is ready for putting on. You can apply it with a paint brush or a whitewash brush. Add any color you wish, when you are ready to apply it; or you can take a little linseed oil and white lead, and add different colors and apply a coat on the above paint, especially in front of the portico, so that the fronts of your hives shall be of different colors.

When the above paint is mixed ready for the paint mill, thin it down with sour milk to the proper consistence of whitewash. Keep your hives covered and it will last several years. The bee-moth is not apt to deposit eggs in the cracks or crevices of hives, if filled with this paint. The vitriol kills the larvæ.

This whitewash is good to put on any outbuildings. It preserves the boards from warping or cracking in the sun, better than white lead and linseed oil will.

Alfred Chapman.

New Cumberland, West Va.

[For the American Bee Journal.]

Ventilation.

Mr. Editor:—I would like to be informed, through the columns of your interesting Journal, what constitutes proper ventilation. There is such a diversity of opinions, and so many ways recommended, that one with little experience is perplexed as to what mode to adopt. Some tell you that the summer passages must be kept open or the bees will smother. Others say that they should be closed, to give a chance for the dampness to pass off at the top of the hive. Now, if there is danger of suffocation with the summer passages closed, how is it that many beekeepers in this vicinity, as well as in other places, who do not see their bees from fall to spring, permitting the snow and ice to collect around the entrances, still do not lose their bees?

Some say there should not be a current of air passing through the hive. Now, I would like to ask, will there be a current passing through the hive, if the summer passages are open, and two or three thickness of woollen cloth, or a good covering of shavings, be placed over the frames, after the honey-boards are removed? And, also, does a hive need upward ventilation in the height of the breeding season, if it is shaded from the hot sun?

Will any of our friends give us some light on this subject, pointing out briefly and plainly what is and what is not required according to season and circumstances?

A. Green.

Amesburg, Mass.

Evidently there does exist a line of demarkation between distinct species, which only requires to be diligently sought to be found, obscure as it may appear to be, but which the insects themselves obey; for however closely species may seem to approximate, yet I do not believe that they ever permanently coalesce, but that they are always as distinctly separate as are assymptotes. —*Shuckard.*

The study of natural science has progressively reached an extraordinary development, spreading in every direction its innumerable tentacula; to which the perfection of the telescope and of the microscope have still further added, by the discovery of new worlds of wonder.

[For the American Bee Journal.]

The American Hive.

Will some one who has had more experience in the use of the above-named hive than I have, please tell me how *to see* if the bees in them have sufficient stores to carry them through to the spring, without taking out all or half of the combs?

I am led to make this inquiry from the difficulty which I had a few days ago, in ascertaining the condition of a hive belonging to a friend. He has three hives. One a box hive with a movable cover to the honey chamber; one a shallow Langstroth; and the other an American. On removing the cover of the box hive, I could get a tolerably good idea of its condition; and by separating the combs of the Langstroth hive, I could at once see both the amount of honey it contained, and the size of the swarm. But the American was entirely beyond *me*. The top presented nothing but the solid tops of the frames, with about two by one-half inches cut out, for the bees to pass through to get to the surplus boxes; so I could see nothing from there. I then took off the movable side, but could only see one side of one comb. When I attempted to take out the comb, I found the frame glued fast, with propolis, all along the top; as are all the rest. Having nothing at hand to separate them with, and having very little time to spare, I was obliged to give it up. Separating these combs would have been a very small matter in this one hive; but I should be very sorry to have to do it to all the hives in my own yard, before I could ascertain their condition in the spring.

D. M. Worthington.

Elkridge, Md., April 13, 1870.

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[For the American Bee Journal.]

A New Moth-trap.

As the season is near at hand when that great pest of the apiary, the *Bee-Moth*, begins its untiring work of depositing eggs in every suitable place, I deem it advisable to put all on their guard, so that, if possible, they may baffle this foe in some of its manœuvres.

The following is an excellent moth-trap, which every bee-keeper would do well to put in operation as early in the season as the moth begins to be troublesome.

Take common glass quart fruit jars, "the more the merrier," fill each two-thirds full of water well sweetened with honey, molasses, or sugar. Tie a string around the neck of each jar, and suspend from the limbs of fruit or other small trees near the hives. In the evening the moths or "millers" are attracted to the sweetened water in great numbers, and when once in seldom succeed in getting out.

I first saw this method practiced at the apiary of a friend a few miles from this place, last season. The top of the water was completely covered with moths and flies; and he assured me that he was obliged to empty the jars, at least every other day during the summer months, as they would get so full that there was no chance for more to drown.

One moth thus killed in May or June is equivalent to hundreds of worms a few months later. See to it then that as many are early destroyed as possible.

The bees will never trouble these jars when there is honey in the fields.

I. F. Tillinghast.

Factoryville, Pa.

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[For the American Bee Journal.]

To Keep Bees from Swarming.

Mr. Editor:—In volume 4, page 185, Mr. Quinby describes a box for preventing the queen from escaping.

I am sorry to say I cannot understand fully what is intended. Where is the box placed? It appears it has been understood, for at page 119 of the present volume, Mr. A. C. Manwell says, "it works like a charm." Will some one please to explain how it it is used?

Tyro.

Ontario, Canada, Feb., 1870.

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Honey Emptier.

A correspondent of the Journal of Agriculture, writing from Springfield, Ill., says:

"Our first swarm, hived May 22d, 1869, stored in boxes, making all the comb, one hundred and ninety-two pounds of honey. This has been removed as fast as the boxes were filled. The hive now contains forty pounds net of honey, some ten pounds more than it really needs for wintering well, showing that the bees did not rob themselves to store in boxes. They are half-breed Italians, and when hived were supplied with three frames of comb. Other hives have given us from seventy-five to one hundred pounds, while some of our hives were so full in the early part of the season that there was but little room for the queen to breed, and consequently were deficient in bees to store honey. Many of these hives were relieved of their surplus honey with the honey-emptier, and they are now strong hives. This honey-emptier is a great addition to an apiary. In fact, I should hardly be willing to do without one, though as generally made they are quite deficient. Being made of wood they absorb honey which is apt to sour in warm weather. They are also made with flat bottoms. Seeing these imperfections led us to get one up ourselves, with which we are pleased. It is made of tin, with the bottom sloping to the centre, where the honey is drawn off through a tube, so that all of it will run out and none be wasted. This makes it convenient for throwing out small lots of honey, as every drop of it will run to the centre, ready to be drawn off when wanted.

S. C. F.

Springfield, Ill.

◆

Bees gorged with honey never volunteer an attack.

THE AMERICAN BEE JOURNAL.

WASHINGTON, JUNE, 1870.

☞ With this number closes the fifth volume of this Journal. Though it is gratifying to us to be able to say that the volume ends with a largely increased subscription list, it is nevertheless true that the bee-keepers of the country have not, thus far, sustained our effort to establish an organ of communication for the common benefit of those interested in bee-culture, as generally and as generously as we presumed they would when we engaged in the enterprise. Though the Journal now does somewhat more than pay cost, our aggregate expenditures for its support since its commencement largely exceed our total receipts, regardless of time and labor devoted to the work. Of this, however, we have not complained, trusting that, in due season, our services and efforts would be properly appreciated in the quarters to which we must look for encouragement and remuneration. With increasing patronage, we have steadily enlarged and improved the Journal; and it is our constant endeavor to make it keep pace with the progress which the specialty to which it is devoted is continually making at home and abroad. But to improve the paper to the extent we contemplate, and publish it as frequently as its steadfast supporters desire, demands more ample fostering aid than we have yet received. Give us *that*,—give it right speedily, and the AMERICAN BEE JOURNAL shall soon be made all that its warmest friends wish it to be, without deviating an iota from that *impartiality* and *fair dealing* which have always been among its prominent characteristics. Will our friends assist us in the effort to increase its circulation? Each can do much in its behalf, in his own immediate neighborhood, by presenting it to the notice of practical bee-keepers who are not yet numbered among its patrons. Those who have already done so, have our cordial thanks for their kindness.

The carrying in of saw-dust for pollen, as noticed by Novice, was observed many years ago in Germany, and occasionally in this country; but appears to have been practiced this spring, more generally than usual here, by the bees, especially in the west and southwest. To what extent, or how, it can be used by them, as a substitute for the pollen of fruit blossoms, remains to be ascertained.

In the Bienenzeitung, vol. 6, No. 20, for 1850, Mr. Scholtisz stated that he saw his bees carrying pellets formed of *charcoal dust*, which were black as jet, and had a sweetish taste—the dust having evidently been slightly moistened with honey.

The plant mentioned by Mr. Argo as springing up in a vineyard and furnishing early pasturage for his bees, and of which he sent us a specimen, is the *Lamium* or dead nettle; but whether the *stem-clasping* or the *purple*, the specimen did not enable us to determine—probably the former, as the latter is comparatively rare. It is a good honey plant in its season, but otherwise a worthless weed, introduced from Europe, and not easy to extirpate when it gets a foothold. It is an annual, quite hardy, often blossoms in mid-winter when the weather is mild, and seeds profusely. The pollen gathered from the flowers is orange colored.

Bees' Metamorphoses.

According to recent careful observations made in Switzerland, the development of queens, drones and workers proceeds as follows, in the ordinary temperature of the hive in spring and summer:

The egg hatches on the third day after being laid. The queen remains in the larval state, in the open cell five days; the worker five days; and the drone six days and twelve hours. In spinning the cocoon, the queen spends one day, the worker one day and twelve hours, and the drone three days. After spinning the cocoon the queen remains a larva two days and sixteen hours, the worker three days, and the drone two days and twelve hours. After changing, the queen remains in the nymph or pupæ state four days and eight hours, the worker seven days and twelve hours, and the drone nine days. Hence, from the capping of the cell to the issuing of the bee, the queen usually requires eight days, the worker twelve, and the drone fourteen days and twelve hours; making from the laying of the eggs to the emerging of the perfect insect, the normal period of sixteen days for the queen, twenty for the worker, and twenty-four for the drone. This period, however, is occasionally hastened or retarded by the peculiarly propitious or unpropitious state of the weather or the temperature of the hive; and the term has been found to vary,

In the queen,	from the	15th	to the	22d	day.
" worker,	"	19th	"	26th	"
" drone,	"	23d	"	28th	"

Attaching Guide Combs to Frames or Bars.

COTTAGE CHEESE CEMENT.—Dissolve one ounce of borax in six ounces of water, and use the solution for mixing with curd or cottage cheese to reduce it to the consistence of paste. Spread a thin layer of this on the surface of the frame or bar to which the guide comb is to be attached; cut your comb into strips of about one-inch in width, and press these gently on the paste, lengthwise of the frame, from end to end.

Set the frame aside in an airy place, in the shade, to let the cement dry.

Gum Arabic Cement.—Dissolve gum arabic in water, to a syrupy consistence; cut your comb into strips, and proceed as above directed. Good clean glue may be used for the same purpose. There is no danger that the cement will become softened by the moisture of the hive, as the bees will immediately fasten the comb more securely, if need be.

It is well to prepare frames thus with guide combs, at leisure moments, some time before they are likely to be wanted. After the cement has become dry, insert the frame in one of your strongest colonies, and let it remain there twenty-four hours. In that time the comb will be properly fastened and trimmed up in workmanlike manner, and the frames should be removed for preservation and use. A plentiful supply of frames thus furnished will be found very convenient and serviceable. They can be preserved from the moth and the worm by suspending them in a box, and occasionally exposing them to the fumes of burning brimstone—which is the only use that should ever be made of that commodity, in an apiary.

Ignorance not Bliss!

A correspondent of a Western paper, giving an account of his perambulations in the "rural districts," says—

"We called at the residence of Mr. R—, who had been confined to his room and bed for three weeks. His affliction was severe, and all occasioned by the *stings of bees*. The way it happened was this: One hot day, while the men were in the hay or wheat field, a cow came near to where the bee-stand was, and it seems the honey-making family had a dislike to *Old Horny* coming so near, they mounted the cow, not only by scores but by hundreds, and tormented and stung the poor brute so severely that Mr. R. was compelled to go and try to relieve her from the bees, or rather the bees from the cow. And no sooner had he made his appearance in behalf of *sookey*, than the bees mounted him and stung him most unmercifully. The result was his face and body began to swell from the poison, so that in fact at one time it was thought his life was in danger."

Certainly this was altogether a sad occurrence; but had Mr. R. been a reader of the Bee Journal. and *remembered what he read*, we think it likely he would have been spared all this suffering and confinement. By immediately spreading a blanket or linen sheet, "dripping wet," over the cow, and keeping it wet, he would quickly have *relieved* her, without probably receiving a sting himself. And if, in their fury, the bees had assailed him also, the prompt application of coal oil, or recourse to friend Gallup's "water cure" would in all likelihood have averted the consequences from himself.—People who keep bees in these days, hardly have an excuse for not knowing how to treat them in such emergencies.

Hiving under Difficulties.

Natural swarms will sometimes alight in nearly inaccessible places, as in a dense hedge, or in a gooseberry or currant bush. When this is the case, take an empty straw or box hive, with its bottom board, and place the latter as near as possible to the cluster, so pressing it in the soil that bees cannot get under it. Then with a long-handled spoon or dipper scoop up a parcel of bees from the cluster, transfer them to the bottom board, and immediately invert the hive over them, with the entrance towards the cluster. Transfer some more bees to the front of the hive, and they will immediately commence fanning and humming. If the cluster cannot be reached with spoon or dipper take a long stick or paddle, besmear one end of it with honey or sugar syrup, insert it in the cluster, let bees gather on it, and shake them off on the bottom board or in front of the hive. Now take a fumigator and blow tobacco smoke *gently* on the cluster, *from above*, to alarm the bees, which hearing the humming and finding their lodging getting uncomfortable, will soon descend to the ground, travel to the hive in regular troop, and take possession without hesitation. Let them enter without further annoyance from smoke; wait till you are sure the queen is with them, if you have not seen her travelling along in the crowd. If they remain quiet and content for half an hour, remove them to your apiary and transfer them to a movable comb hive. Q. E. D.!

Worse than Foulbrood.

The correspondent before referred to says he too could write a chapter on bees, as he has considerable experience in the bee business. Though he knows not much about being severely stung, yet he "*knows something about money-making over the left.*" He once bought forty-five colonies of bees, hauled them home into his yard, had a house put up; and "the result was every pound of honey cost me over three dollars, and in a few years I had not a sting or a bee left. There the old boxes and deserted hives stood. It seemed as if every calamity that bees are subject to, came over my bee family, and I was minus $300."

Now, we fancy that any "new beginner" who would go into the "bee business" in that style and on that scale, would be quite likely to find himself, in a few years, suffering from precisely such a calamity. No doubt the writer was pretty severely stung on that occasion, and we suspect he has not yet got entirely over the pain or the swelling.

That Bee Hive Case Again.

At the late session of the United States District Court, at Milwaukie, the Grand Jury found an indictment against K. P. Kidder, for perjury in the Bee Comb Guide Case of Kidder vs. Trask, about which we have had occasion to remark more than once. —*Western Farmer*, Madison, Wis.

Correspondence of the Bee Journal.

Wickham-breaux, England, March 30.—Bees did very poorly in this country, last summer. Most bee-keepers lost half their stocks during the winter, and those still alive are scarcely out of danger.—W Hewson.

Fulton, Ills., April 20.—The bees in this section have generally wintered well. They have been carrying in pollen for a week or ten days, when the weather would admit of it. The soft maple and the elm are in bloom; also the hazelnut and poplar.—R. R. Murphy.

Brooklin, Canada, April 29.—The spring so far is backward here. There was a fearful loss of bees during the winter, owing to a want of honey. Last season was so extremely wet and cold, that very little honey was stored. I think fully one-third, if not one-half, of the bees have died in this province.—J. H. Thomas.

Mobile, Alabama, May 7.—The season here has been in many respects remarkable. Bees commenced obtaining pollen about the middle of January, and began breeding very rapidly. Many stocks, well supplied with honey, exhausted all their stores by the 1st of March. The spring was backward—nearly twenty days later than usual. Consequently stocks had to be fed not only to prevent a cessation of breeding, but actual starvation. It continued thus until Tuesday the 12th of April, when they commenced obtaining honey, which, though very thin and transparent, was so abundant that on Friday evening, the 15th—or in three days—some stocks that were fed on Monday to keep them from starving, contained fifty pounds of honey. In a few days more honey from the blackberry blossoms became abundant, and has so continued ever since. The amount of honey collected within the last three weeks is without a precedent in this locality.—In order that I might the easier Italianize my apiary, I reduced the number of stocks and permitted no swarming; consequently all my stocks were strong. I am not yet prepared to state the exact amount of honey obtained within about three weeks, but some stocks have certainly collected one hundred and fifty pounds and made two-thirds of the comb to store it in. Every young bee that emerges from its cell, has its place at once supplied with honey, hence I have never known a season in which the melextractor was more necessary.—J. M. Worden.

Knowersville, N. Y., May 9.—The last season was a poor one for bees, in this locality. The Italians proved their superiority beyond a doubt—swarming and storing surplus honey, while the natives were doing comparatively nothing.

This year the season opens with better prospects. The plum and cherry trees are in full bloom, and the bees are improving the time.

I like the Bee Journal very much. I wish it came weekly, instead of monthly. I have used some of Novice's bee-feeders and like them very well.—W. D. Wright.

Wenham, Mass., May 10.—In the May number of the Journal I find another communication from Mr. D. T. Batcheldor, of Newburyport. Now as I very much dislike to be made out a liar, as Mr. B. would make it appear, I mean to show proper resentment, and shall try to turn the tables on Mr. B., which I think I can do, as I have plenty of evidence to prove my statement was correct.

I can prove by the "*Honey Committee*" that my statement in the February Journal, page 196, is true in every sense of the word. I was present in the room when the Committee made up their awards, and know whereof I speak. I say again that Mr. D. T. Batcheldor was awarded only two dollars on his bees, and his brother, D. C. B., was awarded a like amount.

I know, Mr. Editor, that this correspondence is not very interesting to many of your readers, but while I am about it, I would like to have it known how it was that Mr. B.'s bees did so well. That hive of bees had been in my care for several years. They were in a hive that I devised (except the movable frame principle). They were transferred into it by me; and, in fact, it was about the same thing as taking one of the best stocks of bees from my apiary. Now he has come out in the Bee Journal, boasting how well his bees have done, and intimating that he beat friend Alley and two or three other old bee-keepers—new style of hive and all; and all this with only *one* year's experience! What a wonderful head that man must have; why I should think he would have the head-ache all the time.

Mr. B. says he has not seen Mr. Noyes, of Seabrooke, "where friend Alley has been inserting queens, dividing swarms, &c." Well, now, I have seen Mr. N. and will say, for the benefit of Mr. B., that Mr. Noyes had one stock of bees in the same kind of hive and they were only two miles from Mr. B.'s apiary. They stored one-third more honey last season than Mr. B.'s did, in the same kind of boxes. And what is still better, I have seen Mr. N.'s bees this spring, and the one stock alluded to is worth more than both Mr. B.'s. Mr. Noyes is an old bee-keeper, and friend Batcheldor cannot expect us old bee-keepers to make our bees do as well as his. I suppose we haven't got the "backbone and cranium." I will say, however, that Mr. Noyes has had excellent "luck" with his bees up to the past winter, and is satisfied with what his bees have done—having done as well as the average.—If any one informed Mr. B. contrary to the above, I can only say that they knew nothing about it. I will add also that I never divided more than one hive of bees for Mr. Noyes, and that was four years ago.

Mr. B. says his brother told him, within one month, that his bees did not store as much honey as I stated (forty pounds) "by more than one-quarter part." All I have to say about this is, that I have seen that brother within three days, and his word is my authority, and he says he told his brother no such thing. Mr. B. also states that his brother had old comb in his boxes. I am inclined to think Mr. B. is mistaken about this, from the fact that I put all the comb in those boxes, and the whole put together would not have filled six of the boxes. I merely put in a small piece of guide comb, to induce the bees to go into the boxes and commence work. I have recommended this same thing in the Bee Journal some time ago.

I stated that, "on the first day of June one of the combs in the brood box broke down and destroyed more than two quarts of bees." Mr. B. thinks this part of the story intended as an advertisement for my hive. I will remind him that he can find my advertisement concerning my new hive in the advertising columns of the Bee Journal. I believe I did not commence to advertise my hives until I had made and tested it. Neither did I give notice through the Journal that I had a wonderful hive ("different from any other") that I would describe in the Journal as soon as I had "proved it."

I think I said that Mr. D. C. Batcheldor had received two dollars for his bees. What I intended to say was that he was *awarded* two dollars. I may add that he has not yet called for his money, but intends to do so as soon as convenient.

Now, friend B. when you write again tell us something more about that "backbone;" and if you can as well-as not, say something also about that "cranium." This barking up the wrong tree is bad business; but when a fellow gets into such courses it is best to try and get out again.—

I annex a communication from the Chairman of the Committee on Bread and Honey, at the Essex County Fair last autumn, concerning the awards made by that Committee.—H. ALLEY.

NEWBURYPORT, MASS., May 3.—MR. EDITOR:—My attention has been called to an article in your February number, page 172, from Mr. D. T. Batchelder, and also one in reply in the March number, page 196, from Mr. Alley, and again to another from Mr. B. in the May number, page 243. As these contradict each other, I thought I could set the matter right by a simple statement of the facts.

Mr. B. says he took his bees to the county fair, and there obtained the first premium of four dollars. This is a mistake. No *premium* was ever offered by the Essex Agricultural Society for Bees or Honey. A sum of money is placed at the disposal of the Committee on Bread and Honey, to be awarded in GRATUITIES, as the articles offered may seem to merit. At the fair in Newburyport last September, of which Mr. B. speaks, there were four entries of bees, viz; D. T. Batcheldor, D. C. Batcheldor, Mr. Alley, and Mr. Green. The Committee unanimously awarded to Mr. D. C. Batcheldor a gratuity of $2; to Mr. D. T. Batcheldor a gratuity of $2; to Mr. Alley and Mr. Green $1, each.

The Committee made an official report in accordance with the above statement, It was published in the Newburyport Herald and the Society's Annual Report: and Mr. D. T. Batcheldor has simply obtained $2 which belong to Mr. D. C. Batcheldor. Of course I do not know whether an error occurred in copying the report of the Committee for the City Treasurer, but if there was such an error, it does not alter the fact that Mr. D. T. Balcheldor did not obtain the first premium, because they were no premiums given; and that Mr. D. C. Batcheldor was awarded an equal gratuity with Mr. D. T. B. admits of no question. The Treasurer of the Society is officially authorized to pay premiums and gratuities; but by permission of one of the officers, the City Treasurer was last year allowed to pay the small premiums, &c. He, being unused to the business, perhaps made a mistake; but, whoever made it, the mistake should be rectified.—EDMUND SMITH, *Chairman of Committee on Bread and Honey, for Essex Agr. Soc.* 1869.

EAST SAGINAW, MICH., May 14.—Almost all the bees in this part of the country are dead. I think it was owing to the watery honey gathered late last season. The weather came on cold before they had time to evaporate the water and cap the cells.—Bees wintered in the cellar did not do as well as those out of doors. There is not much to brag of, as nine-tenths of those outside were lost. I have counted up three hundred swarms that perished, in this vicinity, during the winter and spring. One man lost fifty swarms in his cellar (all he had); where heretofore he wintered them successfully.—L. C. WHITING.

JEFFERSON, WIS., May 17.—My bees came out of the winter very weak and poor. I lost not less than seventy-one colonies out of the six hundred and seventy, which I wintered in. The survivors, where not too weak, are gaining rapidly.

I had better luck this spring in getting young queens purely fertilized this spring, than at any time during the last five years. I have about twenty laying now, and nearly as many more that are from three to six days old.

After learning how black bees came out in this country I have again changed my mind about their being hardier than others. Almost every keeper of black bees has lost nearly all he had. I have only three colonies alive, and these are properly black hybrids.

To make it appear that my prices are as low as those of any other breeder, I have concluded to send off young queens about three days after they commence laying. In my own apiary I had but few hybrids last summer, and will have less this summer; and as no black colony is alive around me now, I can easier furnish two queens without testing, than one with the trouble of testing her.—In my southern apiary, I expect some young swarms within a week from now; but not any at home within a month, if then. All blossoms seem to have honey this season. Some colonies, in my southern apiary, have as much honey now, as they had seven months ago.—ADAM GRIMM.

Erratum.

MR. EDITOR:—In the May number of the Journal, Mr. Wm. M. Stratton corrects the figures, as published, in an article I sent you on Alsike clover. Not having seen the article since it was sent you, I was not aware that it was published. It should read 346,154 bees per acre, or 2,162 per square *rod*, or 8 per square foot. If I remember rightly it was so written, and the mistake is in the copyist or the typesetter. The figures, however, are not exact; fractions are omitted. But they are sufficiently correct to serve as an illustration, and to show that the keeper of a large apiary, who grows any honey-yielding plant for bees, with the expectation of being perceptibly benefitted by it, must cultivate it on an extensive scale.

J. H. TOWNLEY.

Parma, Mich.

[For the American Bee Journal.]

Paper as a Non-conductor.

I would say to Mr J. L. Way that I have tried the Paper Hive, with five thicknesses of paper, one fourth of an inch space between each paper. It was calculated to absorb all the moisture of the bees, and not mould or get damp; and that the bees would winter safe on their summer stands. So I was ready to try one swarm. A friend gave me the hive, and I gave him five dollars for the bees that were in the hive, and brought it home. Before the middle of January my bees were all dead. The paper was damp and mouldy, and all gave way in small pieces. Thus I found that paper was of no account. The hive was Cox's patent. I have used nine different patented hives; and all but two proved to be worthless. I have bought wit very dear!

Bees have done very well here since the first of January. Before that the weather was too wet and cold.

Now, Mr. Editor, if you think this worth an insertion, use it. I hope we shall get the Journal semi-monthly soon. I think we could not well get along without it, as it is. Every bee-man must have it.

W. ROWLEY.

Minn. City, Feb. 23.

England uses two thousand tons of beeswax per annum, valued at $2,000,000.